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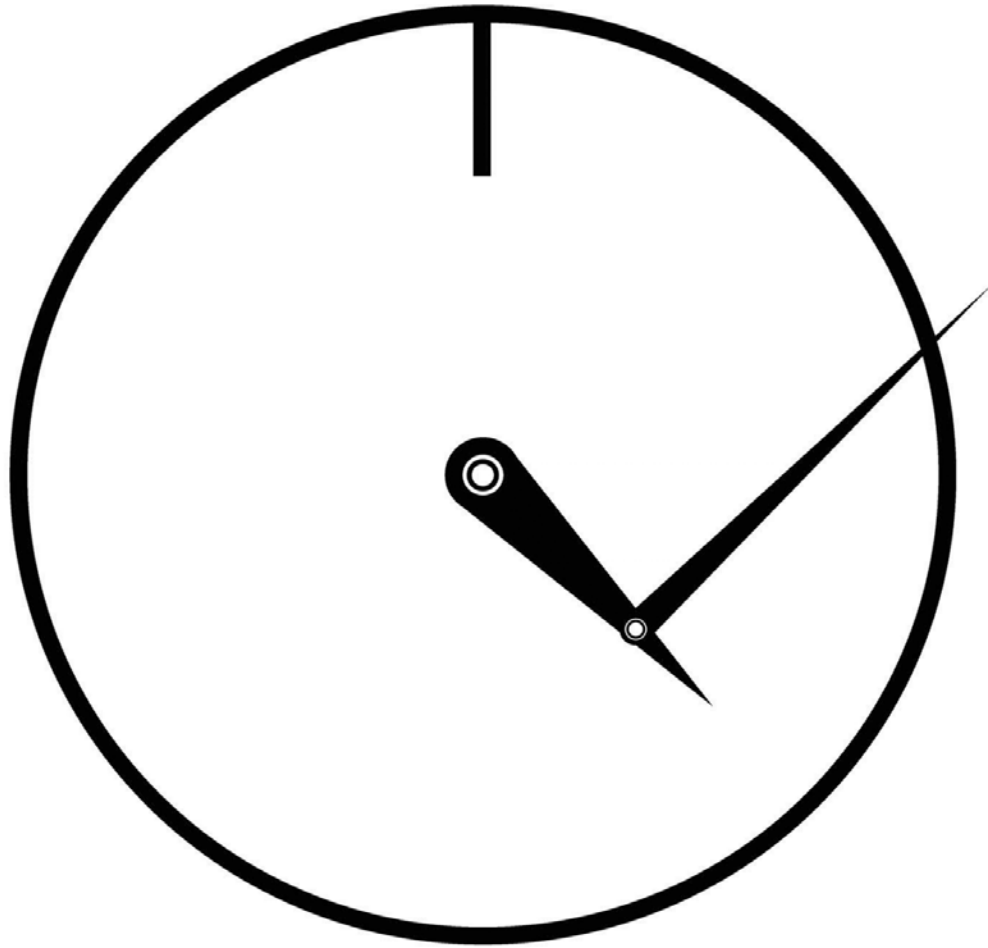
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Flexibility for Whom?
Working time Flexibility Practices
of European Companies

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ISBN/EAN: 978-90-5335-222-9
NUR: 741

Cover design: Phillip Roth Communication Design
<http://www.philliproth.de/>

Flexibility for Whom?
Working Time Flexibility Practices
of European Companies

Proefschrift ter verkrijging van de graad van doctor
aan de Universiteit van Tilburg, op gezag van de
rector magnificus, prof. dr. Ph. Eijlander, in het
openbaar te verdedigen ten overstaan van een door
het college voor promoties aangewezen commissie in
de aula van de Universiteit op vrijdag 13 november
2009 om 10.15 uur

door *Heejung Chung*,

geboren op 1 augustus 1977
te Seoul, Korea.

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Preface & Acknowledgements

This book was written as a part of my life long goal to make our society one where everyone can work shorter, flexible, autonomous and thus more productive hours.

I want to thank everyone who showed interest in my work, for having the patience to listen to the thoughts of a young foolish researcher, and for helping her develop during the past years in various manners. This book is for you. You know who you are.

In case you don't know who you are here are some names in no particular order.

People who taught and mentored me: Hyekyung Lee, Frank Castles, Jaejin Yang,
Chansup Nam, Jon Kvist, Jong-gun Kim, Marcel Kerkhofs

Person who gave me an idea, a job, a bike, and ever expanding music library: Ton
Wilthagen

Person who gave me funding and a great opportunity: Evert Verhulp

Person who gave me not just academic but life advices: Trudie Schils

Person who gave me inspirations and an escape to Berlin: Günther Schmid

People who helped me get through this process & read the final product: Ruud
Muffels, Kea Tijdens, Ute Klammer

Networks of people who helped me directly, indirectly : Edinburgh University
Social Policy group, various ESPAnet groups and workshops, people from
CARMA, and other conferences, the old TLM network people,
Flexicurity Research Programme (Frank, Martijn, Harm), ReflecT group
(Max, Wilma, Annet, Ronald, Irmgard), AIAS (Wiemer, Emma, Casper,
Angelique, Marloes, Helen), the European Foundation (Greet, Brano),
the old WZB labour market group (Almut, Kai-Uwe – aka my STATA
guru, Christian, Paula, Georg, Elanor, Philip), Korean Labour Institute,
OSA(Peter, Amelia), ILO, ETUI people, Tilburg sociology dept., Tilburg
sociaalrecht vaakgroep(Tineke, Maria), working time people (Blanche,
Anne, Heidi, Colette, Dominique, etc.)

Person who made this awesome cover design: Phillip

Person who wrote the Dutch summary & took the hard task of being my
paranymph: Hester

People who proof read my work: Mara, Melanie and others (in *)

People who managed to lived with me during the time: Roberta, Anna, Aurelie

People who kept me laughing at the end of the day: Michele, Miguel, Andrea,
Vasilios, Jong-kyu, Marieke, Vid, Nuna, Yunmi, Olga, Milosh

People who kept me in shape: Cristina, our tilburg yoga team and TUUFT!

Person who practically did all of the above+gave me a google addiction: Owen*

People who survived this with me: Sonja, Anne, Ellen*, Dimitris, Maike

My most awesome girls: Teresa*, Pia*, Hwa-Young*, Gale, Gaia, Mee-Young

My fabulous boys: Alex, Jong-woo, Bertus, Aghlab, Ki-young

People who were there with their love and support: Mum, Dad, Charlie(RIP),
Grandma, my aunts, uncles and cousins, mama and papa Roth,
friends back in Seoul, Edinburgh, Tilburg, Amsterdam, Berlin and all
around the world.

Person who had to survive me through the period & love me regardless: Marcel

..... and so many more of you whom I forgot to mention

(your name here)

29th of September, 2009 Amsterdam, Heejung

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Chapter I. Introduction and Literature Review

1. Introduction: Setting the scene

Labour market flexibility continues to be one of the key issues in labour market reform for European welfare states. International governmental organisations such as the EU and the OECD acknowledge labour market flexibility as a key element in increasing the competitiveness and effectiveness of their labour markets. In particular, European labour markets have been criticized for being rigid and lacking adaptability in a rapidly changing social and economic environment (OECD, 1994; EET, 2003; CEC, 2007a). Especially in the light of the recent financial crisis, labour market flexibility strategies are viewed as important reform measures in tackling the problems faced. Yet, despite this attention, several problems remain in the fields of labour market research that need to be addressed before flexibility can be examined properly.

Firstly, there is a problem of incorporating the needs of workers into the discussion of flexibility in research. Until now, flexibility has predominantly been examined by concentrating on the arrangements companies use to adjust to market fluctuations. Not enough attention has been paid to the potential of labour market flexibility to enable individuals to meet the various different needs that occur throughout their life course. Used in the right way, labour market flexibility strategies can help workers who must juggle work with care, education, leisure, and other activities. As companies adapt to business cycles through labour market flexibility, individuals can adapt to their life course needs through flexibility. Although this point may have not been addressed sufficiently in the labour market research fields, it is an issue increasingly featured in national agendas.

Increasing flexibility for workers has been stated as one of the central objectives in the European Commission's (CEC) Employment Strategies since 1998 in their Joint Employment Report (CEC, 1998), and has gained even more ground through EC's promotion of flexicurity as the new European social model (CEC, 2007a). Flexicurity can be defined as "an integrated strategy to enhance, at the same

time, flexibility and security in the labour market” (CEC, 2007a: 10) that “simultaneously addresses the new needs of employers and employees” (CEC, 2007a: 8). As we can see in its definition, in the flexicurity approach, flexibility is not necessarily defined as a tool just for employers, but a tool to develop “flexible work organisations where people can combine their work and private responsibilities, where they can keep their training up-to-date and potentially have flexible working hours.” (CEC, 2007a: 11).

Of the various types of flexibility, working time flexibility has especially been gaining much attention for its ability to facilitate the needs of both employers and employees. Flexible working hours have been linked with the development of flexible work organisations for work-life balance combinations, as we can see in the Commission’s document on flexicurity. The trade unions are also in favour of the use of working time flexibility. The ETUC (European Trade Union Congress) puts forwards working time flexibility as an alternative way to enhance labour market flexibility, rather than through easing of regulations on hiring/firing workers or through the use of temporary contracts (ETUC, 2007). In addition, working time flexibility is used by many companies as well as countries to adapt to business cycles as well as economic cycles, such as the problems faced in the recent financial crisis.¹ All in all we can say that working time flexibility has the potential to be a flexibility strategy that can facilitate the needs of employers while supporting the needs of employees as well. In this study, we explore the possibility of examining the flexibility needs of employers and employees in combination, focusing on the practices of working time in Europe.

One important reason for the prevalence of a lopsided view of flexibility is the insufficient information available on a wide range of flexibility arrangements that are comparable across countries. This is facilitated in this study through the use of the Establishment Survey of Working Time and Work-life Balance (ESWT). The ESWT

¹ For example, the Dutch government is using working hours reduction (werktijdverkorting), temporarily, as a measure to help companies in times of needs for restructuring while preventing mass unemployment. For more details see the [Dutch Unemployment Insurance Fund\(UVW\) website](#). Also see Goudswaard et al., 2009 for examples of companies adapting working time flexibility to enhance performance outcomes.

data set covers a wider scope of flexibility, and more specifically working time arrangements used within a company. In particular, this survey incorporates various flexibility measures that can be seen as serving employers' needs and/or employees' needs. Through the analysis of this data, labour market flexibility, and particularly working time flexibility, is considered in a broader context and as something that can possibly accommodate the needs of both employers and employees.

The second problem with the studies of flexibility is the predominance of country level studies in this field. Many studies that deal with labour market flexibility issues use national level institutions as proxies of flexibility or examine individual flexibility behaviour aggregated to the national levels, and focus on comparing cross-country variation of flexibility (more in section 2 of this chapter, and in chapter 4). These approaches presume that individuals and companies act rather homogeneously within countries, due to their institutional restrictions or other country characteristics such as culture or the general economic situation of the country. However, since labour market flexibility is implemented or taken up as a strategic measure to overcome institutional restrictions within countries, and different individuals and companies have different needs as well as capacities for flexibility, this presumption of homogeneity within countries does not necessarily hold true. Thus, we need to be more aware of the diversity within countries, and examine what is happening at the micro level, thus individuals and companies, to truly measure what is happening in terms of flexibility behaviour. This is especially true given that these two levels are where flexibility behaviours actually take place (Chung and Wilthagen, 2008). Examining the company level is especially important when the purpose of the study is to investigate the provision of flexibility arrangements to individuals. This study fills this niche by examining the use and provision of working time arrangements of European companies.

The third limitation of the studies in the field of labour market flexibility, or more precisely, studies that deal with working time flexibility, is that there is yet to be an approach that allows for a holistic view of different flexibility arrangements simultaneously. Thus, most studies examine working time flexibility by focusing on the actual hours worked, or by focusing on the use of one or a few arrangements

separately. However, flexibility arrangements are not used in isolation, and are usually part of a larger corporate strategy where arrangements are used in various combinations (Kalleberg et al., 2003). To accurately measure what is happening within companies in respect to working time practices, we must examine not only the use or provision of arrangements separately, but in combination. For this reason, we propose to examine working time arrangements as bundles or components. Thus, we propose to examine arrangements in groups and not as separate entities. This approach will provide a holistic view on working time arrangements, to derive the concept of working time components.

The last problematic issue that is addressed in this study is the problem of generalising theories to different environments. In many studies in the fields of sociology and labour markets, dealing not only with labour market issues but also other topics, it is common to find a general theory that purports to be applicable to all countries, all sectors, and all companies. However, as noted in the flexicurity communication of the European commission, there is no one-size-fits-all approach to flexibility (CEC, 2007a). In respect to our study, working time practices as well as their determinants may have different meanings in different countries due to differences in the character of the environments they are embedded. Working time practices may also have different outcomes depending on the country or sector in question. Thus, we must be aware of cross-national variances in the relationships found. This is done through the use of multilevel modelling, a method increasingly being used in the fields of sociology as well as other disciplines. Multilevel models allow the examination of contextual effects of cases, thus how the same things can have different meanings in different contexts. In addition, this model also allows us to examine company, as well as country characteristics simultaneously when modelling the determinants of working time practices. Many previous studies that examine company or individual level flexibility behaviours could only show the difference found between countries, while not clarifying the reason behind these differences due to methodological limitations. Through the use of multilevel models, we are able to peer into this black box, to show the reasons behind the country differences in company practices of working time.

Before we go on to examine the key questions and hypotheses of this study, we first need to examine the definitions of the key concepts dealt with in this study, as well as to review the main literature in the area of company working time practices, to see their respective limitations. The most important concepts to examine are those of labour market flexibility and working time flexibility, especially the definitions used in the studies that empirically measure flexibility. Due to the abundance of literature on the topic of labour market flexibility, we cannot provide an exhaustive overview. However, in this chapter we cover at least the most influential studies in this area. This is done in the next section, section 2, where we examine the main definitions used to empirically measure flexibility. From this we conclude that the needs of workers have to be considered in the debate of flexibility and flexicurity. In section 3, we further discuss this idea of flexibility for workers and companies and how this could be defined. Section 4 examines the relevance of the company level, the key level of our study, when investigating issues concerning working time flexibility, and the relationship between institutions and company practices. Section 5 discusses the issues of examining flexibility components or bundles, and gives a brief introduction of what this would entail. Section 6 discusses the need for multilevel modelling, thus how there can be diversity in the relationships found between variables depending on the sectors and countries in question. Finally, section 7 catalogues the key questions asked in this study along with the main hypotheses.

2. Labour market flexibility

2.1. Definition

Labour market flexibility is a somewhat abstract and confusing concept (Pollert 1991; Standing 1999) and its definition can vary across authors and disciplines. Previously and perhaps currently, the predominant definition of flexibility was the neo-classical one, which does not define flexibility per se, but what a lack of flexibility could entail. In this definition, a labour market is considered inflexible when there are institutions that prevent the labour market from reaching a continuous equilibrium state (Standing 1989; Jimeno and Toharia 1994; Ederveen and Thissen 2004). This equilibrium state

may be understood as a situation where all resources in a given market are allocated in a Pareto efficient way (Hahn 1998; Eamets and Masso 2004). However, generally labour market flexibility refers to the extent and speed with which labour markets adapt to fluctuations and changes in society, the economy and production cycles (Standing, 1999: 49).

In this section, we examine some important strands of literature, concerning labour market flexibility to examine the definitions and operationalisation of flexibility used in these studies. Here, we focus on the studies that have empirically measured flexibility.

2.2. Labour market institutions and EPL

In the beginning of the 1990s, the word flexibility was not explicitly used in studies that dealt with labour market flexibility. The studies focused more on labour market institutions, and they were mostly economic studies of the effect institutions have on labour market performance. Labour market institutions were defined here as unemployment benefits, union characteristics, employment protection legislations (EPL), tax wedges on unemployment, employment rates, and unemployment durations. These studies include Layard et al. (1991), OECD (1994), Nickell (1997), Scarpetta (1996), Siefert (1997) Elmshov et al. (1998), Esping-Andersen (2000), Ederveen and Thissen (2004), Di Tella and MacCulloch (2005), just to name a few. Their main goal was to explain the cross-national variance of economic and labour market performances of either OECD or European countries. These studies became more abundant in the 1990s, with the key interest of explaining the chronic unemployment rate of Europe – Eurosclerosis – which was then high, especially compared to that of the United States and Japan. The reason for this interest was that until the 1970s, US unemployment rates were higher than that of Europe, and while the labour market of the US was flourishing from the 1980s onwards, European markets seemed to be facing an ongoing depression, making the gap between the two continents ever more visible.

In these studies, the neo-classical definition of labour market flexibility was used where labour market institutions were seen to inhibit the “clearing functions” of the market by “weakening the demand for labour, making it less attractive to hire a worker by explicitly pushing up the wage costs or by introducing a negative shadow price for labour; by distorting the labour supply; and by impairing the equilibrating function of the market mechanism.” (Siebert, 1997: 43) Although the wording “flexibility” was rarely used in the text, the conclusions of these studies do suggest that more or stricter institutions imply rigidity, and that relaxed institutions foster flexibility in the labour market. However, using the same definition and methods, others maintained that Europe was diverse and that not all labour market institutions were harmful. They claimed that each institution has a different effect especially in combination with others. In addition, in European labour markets, institutions were seen to be useful in overcoming many market failures or in overcoming the crises that arise in markets in many cases (see for example, Leibfried and Rieger, 1995; Auer, 2000; 2001; Kuhnle et al., 2000; Boeri and Van Ours, 2008).

In addition to these studies, some researchers simply used employment protection legislation, or the cost of hiring and firing workers, as the key labour market flexibility measurement (such as Regini, 2000; Auer and Cazes, 2003; Di Tella and MacCulloch 2005). In these studies labour market flexibility is used interchangeably with firing and hiring costs. Even in the recent flexicurity indicators literature, EPL has been the most widely used, if not the only indicator used, to represent the flexibility of the countries (Chung and Wilthagen, 2008; for example CEC, 2007a; CEC 2006a; CEC, 2007b). However, this is a very narrow way of defining flexibility which does not take into account the various ways in which it can be used nor does it accurately represent the actual practices of flexibility. Thus, in the next section we examine further alternative definitions and ways in which labour market flexibility can be measured.

2.3. Micro-level indexes: mobility indexes and flexible staffing arrangements

Mobility indexes

Another group of studies that address the issue of flexibility measurement define flexibility through job turnover or mobility indexes (Abraham and Houseman, 1994; Salvanes, 1997; Solow, 1998; Muffels, Wilthagen and Heuvel, 2002; Muffels and Luijkx 2004). In this line of studies, labour market flexibility is defined by the job matching speed or the mobility workers have in the labour market. Solow (1998) notes that a perfectly flexible market is one that “interposes no obstacle to the frictionless matching of an unfilled job and an unemployed worker with the appropriate skills.” Similarly, Muffels and Luijkx (2004) and Muffels, Wilthagen, and Heuvel (2002) define labour market flexibility as the likelihood of transitions of the labour force. In these studies, turnover rates of actual movement indices of individuals from and to different situations within the labour market are used as proxies to measure how flexible a market is.

Flexible staffing arrangements

Another line of studies that deal with flexibility is the studies on flexible staffing arrangements (for example Atkinson, 1984; Atkinson and Meager, 1986; Kalleberg et al., 2003; Houseman and Polivka, 2000; Houseman, 2001; Brewster et al., 1994; 1997). Flexible staffing arrangements are arrangements used by companies for various needs to enhance flexibility. These studies examine the flexibility practices of companies through their use of flexibility arrangements. This line of study can be considered as taking the “managerialist” approach (Bagguley, 1991:164; Brewster et al., 1997: 134), and the key interest here is to examine the practices and trends of establishments and try to understand why certain establishments use certain flexible staffing arrangements, along with the implications the use of certain arrangements may have.

One of the key interests in these studies is the different types of strategies companies use. Kalleberg (2001) notes that there can be several ways in which one can categorise flexibility strategies of companies. They are functional versus numerical (Atkinson, 1984; Smith, 1997; Hunter et al., 1993), internal versus external

flexibility (Cappelli and Neumark, 2004), Clan versus market (Ouchi, 1980), dynamic versus static flexibility (Colclough and Tolbert, 1992; Deyo, 1997) and organisation-focused versus job-focused employment relations (Tsui et al., 1995). The most widely-used distinction of labour market flexibility is the one made by Atkinson (1984) that distinguishes flexibility depending on where the flexibility exists, internal or external to the firm, and how it is developed, functionally, numerically or financially. Such a division allows for four distinct types of flexibility (Atkinson, 1984; Atkinson and Meager, 1986): external numerical, internal numerical, functional and financial.

External numerical flexibility refers to the adjustment speed of labour intake, or the number of workers hired from the external market. This can be achieved by employing workers on temporary or fixed-term contracts or through relaxed hiring and firing regulations, where employers can hire and fire permanent workers according to the firms' needs. Internal numerical flexibility is also known as working time flexibility or temporal flexibility. This flexibility is achieved by adjusting working hours or schedules of employees. This includes part-time, flexible working hours and shifts, including night shifts and weekend shifts, annualisation of hours, working time accounts, leaves, and overtime. Functional or organisational flexibility is the extent to which employees can be transferred to different activities and tasks within the firm. It has to do with the organisation of operations or management and training of workers. This can also be achieved externally by outsourcing activities to other companies. Financial or wage flexibility is the extent to which wage levels are not decided collectively in a uniform manner, and there are more differences in wages between workers but also between time points. This is done so that pay and other employment costs reflect the supply and demand of labour and performance. It is achieved by rate-for-the-job systems, assessment based pay systems, or individual performance wages. There are other types of flexibility that can be used to enhance adaptability, such as locational flexibility or flexibility of place (Reilly, 1998; 2001; Wallace, 2003). This implies employees working outside of the normal workplace such as home based work, outworkers or tele-workers. This can also cover workers who are relocated to other offices within the establishment.

2.4. Working time flexibility

In the flexibility categorisation of Atkinson (1984) examined previously, working time flexibility is one dimension of the several flexibility strategies firms can take up. There are also a growing number of studies that focus solely on the topic of working time, and we can distinguish two lines of studies from this.

The first group of literature deals with the working hours of individuals, the distribution of these hours, and further the transition between the hours (for example Anxo and O'Reilly 2000; 2002; Schmid, 2002; Gomez et al., 2002; Messenger, 2004; Corral and Isusi, 2005; O'Reilly et al., 2000; O'Reilly, 2003), or the preferences of workers in the working hours (for Fagan, 2003; Stier and Lewin-Epstein, 2003; Bielenski et al., 2005). These studies examine society on the individual level, and the aggregate national levels, using measurements such as the actual hours worked, either daily, weekly, or throughout a longer period of time. It also includes the changes in the working hours and the differences between genders, age groups, and countries. The purpose of these studies is to examine the distribution of hours and whether working time flexibility can be used as a strategy to integrate more people into the market, prevent unemployment, and decrease polarisation of the market. This line of study examines the actual time worked, and not necessarily the character of the time used. In other words, we cannot see whether or not these hours individuals used were within the boundaries of normal working hours, or if they were considered unusual, if they were regular or not, etc. With these studies, the flexibility of the working time addressed is harder to define for this exact reason. In other words, we cannot distinguish between people that work the same number of hours but use them in different manner, thus flexibly versus in a fixed manner.

The second group consists of studies that deal with the use of various working time flexibility arrangements. This can be approached either through examining the individual take up of such arrangements or company practices in the provision of these arrangements. Of these studies, most have concentrated on take up of a single arrangement, such as part-time work (O'Reilly and Fagan, 1998; Anxo et al., 2007a), shift work, or various leave schemes. Some examine working time arrangements as a part of wider work-life balance policies or family-friendly policies (Den Dulk, 2001;

Den Dulk et al., 2005; Plantenga and Remery, 2005; Evans, 2001). These studies focused on examining the assortment of arrangements – working time but also services and physical facilities inside the firm etc.- companies took up to facilitate workers’ work-life balance, and to see which companies used more, in which country, as well as examining the performance outcomes of the arrangements. Many focused on the business case for providing work-life balance facilities.

One conclusion that emerges from the studies reviewed in this section is that until now the focus of debate on labour market flexibility has been on business needs for flexibility. Although some mention that employees’ demands can be the reason for its development (Brewster et al., 1994; Houseman, 2001), there has not been equal attention given to the flexibility needs of employees. Other studies, such as those dealing with family-friendly policies, do examine employee-oriented working time arrangements. However, they are not examined within the flexibility debate, but rather in the welfare state discussion. These studies do not necessarily consider family-friendly arrangements as flexibility strategies, but rather a part of worker’s benefit systems or (the national) welfare systems. In the next section, we discuss the importance of incorporating the needs of flexibility of workers in labour studies.

3. Flexibility for Whom?

3.1. Need for incorporating flexibility for workers

Until recent years, as shown earlier, flexibility research has focused more on the flexibility needs of companies. In the words of Gareis and Korte “flexibility indicators ... which exclude worker-centred flexibility are at odds with many of the prevailing key objectives of EU and national policy making, namely the search for types of flexibility that benefit both employers and workers, and should therefore not be used as policy measurement tools.” (Gareis and Korte, 2002: 1102). There is a great need to increase flexibility for workers. Individuals’ life courses are becoming increasingly diversified, and past policies based on a simplified, uniform life-cycle trajectory or a single family norm are no longer sufficient to address the increased

heterogeneity amongst the population. There is a growing demand of individuals to adjust their working hours and take leave for educational, child-care, sabbatical or other reasons. In other words, labour market flexibility can also be described as a strategy to enable workers to “adjust working life and working hours to their own preferences and to other activities” (Jepsen and Klammer, 2004:157). As companies use flexibility to adapt to business and economic cycles, individuals should be able to work flexibly, to adapt to changing needs throughout their life courses. Thus, by means of increasing and decreasing working hours – including long and short leave, and using these hours in a more flexible manner - changing start and end of working, etc. - individuals can adapt to the “rush hours” and “free hours” of life. Only through including ‘worker-oriented flexibility’ when examining labour market flexibility, could we develop flexibility strategies that can be used to accommodate both employers’ and employees’ needs.

The notion of flexibility for employees is slowly becoming accepted, as the European Commission addresses this issue in its Joint Employment Report and its new Flexicurity approach, calling for adequate methods to enhance flexibility for both workers and employers (CEC, 2007a) that enables workers to quickly and effectively master new productive needs and skills, and also to facilitate the combination of work and private responsibilities. (CEC, 2007a) Of the various labour market flexibility strategies, working time flexibility has especially been gaining increased attention as a work-life balancing strategy for workers from both trade unions and the European Commission (Fagan et al. for TUC, 2006; Plantenga and Remery for the European Commission, 2005; Anxo et al. for the European Foundation, 2006; ETUC, 2007a; 2007b).

Although empirically, the proxies of labour market flexibility have been focused mostly on the employer’s needs for flexibility, theoretically, there have been studies that indicate how labour market flexibility, especially working time flexibility can be distinguished by the needs they serve. For example, in the labour market literature one could find notions such as, employer-oriented versus employee-oriented arrangements (Reilly, 1998, 2001; Gareis and Korte, 2002; Rubery and Grimshaw, 2003), unstructured, structured and autonomous flexibility (Fagan, 2004) and active

versus passive flexibility (Passier and Sprenger, 1998; Wilthagen, 1998; Visser, 2003; Wilthagen and Tros, 2004). Unfortunately, despite the commonly used theoretical approach, there are few cross-national studies that empirically deal with the actual flexibility practices for both workers and companies, or for employees and employers. One of the reasons for this limitation was the lack of readily comparable data. This study overcomes this problem through the use of the ESWT (Establishment Survey on Working Time and Work-life Balance) data set. This survey provides us with information on the establishment level of various arrangements that are used within the firm to enhance flexibility for companies in adaptation to cycles, and workers' needs for combining work and non-work activities. (More on the data will be discussed in chapter 2, and more on the arrangements included in the survey can be found in chapter 3).

3.2. Flexibility for companies versus flexibility for workers

Before we go on to examine how various flexibility options can be categorised as for employers and/or for employees, we first need to ask the question, why employers and employees take up flexible arrangements, thus the difference in the motivations for using flexibility.

The main reason companies take up flexible arrangements is the cost savings that they create (Kalleberg et al., 2003). More specifically, companies can cut costs by quickly adapting their workforce to fluctuations in business demands (Houseman, 2001). Another way to reduce labour costs is to reduce fringe benefits/social security contributions by using atypical workers in countries where temporary contract workers or other types of workers are not covered by the system (Atkinson, 1984; Houseman, 2001). Segregation of the workforce into core and peripheral workers without in-company repercussions can be another motive (Atkinson, 1984; Houseman 2001). Other than this, new workers on temporary contracts, or the use of overtime and flexible schedules within the company, can be used to adapt to staff absences due to leave and absenteeism. Improving quality and service, along with meeting supply needs such as customers' needs, are additional reasons why companies take up various flexibility arrangements such as unusual hours or overtime (Reilly, 2001).

On the other hand, what are the workers' interests in taking up flexible working arrangements? Work-life balance, such as reconciling care and other responsibilities with work responsibility, is one of the main reasons why workers need flexibility in their work (Reilly, 1998, 2001; Hill et al, 2001; Bond et al., 2002; Plantenga and Remery, 2005; Anxo et al., 2005). However, there are other reasons why workers need flexibility. Changing lifestyle and work style/schedule preferences are just some reasons why workers might prefer to choose non-standard working hours or contracts. In addition, the increasing need for life-long learning via training or education breaks can be another motivation for taking leave or having working schedules that deviate from the standard work norm.

But why do companies provide such employee-oriented working time practices to their workers? This can be due to the indirect outcomes or motives for providing work-life balance arrangements. Flexibility measures that provide workers with more leeway to adapt to work and life issues, especially those which are above the legal requirements, can provide various securities for companies. These securities will include things such as workforce recruitment and maintenance as well as skill and productivity maintenance (see chapter 7 for more on this topic). We can say that although flexibility options can be divided into those for the needs of workers versus those for the company, all options are by definition used by companies since they are beneficial to profit generation one way or the other. Plantenga and Remery note how "employers implement work-family arrangements when they perceive the benefits outweigh the costs" (Plantenga and Remery, 2005: 77). In other words, any flexibility arrangements provided by employers will benefit employers at least to a certain degree, with the exception of those arrangements which employers are legally bound to provide. However, even in these cases, companies are most likely to provide the arrangement when it is more beneficial to provide the benefits rather than to pay the fine for not providing them.

Workers have indirect motives as well, such as maximizing income or improving job security, in addition to the previously mentioned direct motives. For instance, in companies with high overtime premiums, workers might have incentives to take up overtime work, thus to enhance their income security. Or in some cases,

workers may be inclined to take up such arrangements when taking up the given arrangement provides more job security (Reilly, 2001). For example, although temporary work is not, in most cases, a flexibility option directly for the benefit of the worker², it can provide workers with job security which translates into income security. As this example shows, flexibility options for companies provide security for workers, or “security through flexibility” (Hikspoors, 1995). These securities include job, employment and further on income security.

We can understand this argument in line with the flexicurity notion where security and flexibility trade-offs are made to enhance the interests of both sides of the employment relationship (Wilthagen and Tros, 2004; Wilthagen and Rogowski, 2002). The flexicurity approach is a way for employers and employees to adapt exchange relationships that lead to synchronizing of the employers’ and employees’ interests (Klammer et al., 2008a; Klammer et al., 2008b). However, it is not always the case that all needs of employers and employees can be met in a positive sum manner. Working time flexibility arrangements are used by employers and employees for different reasons, and they are not always reconcilable. Rubery and Grimshaw (2003) note how employers use working time flexibility to respond to unpredictable fluctuating demands, while employees use working time flexibility to balance work and family life. Since the former is associated with unpredictable working hours, whereas the latter normally involves predictable or regular schedules, depending on the differences in the needs, the two may be conflicting (Rubery and Grimshaw, 2003: 192).

² In EU 27, only 11% of all those who are in temporary contracts, and are above the schooling age and below retirement age (25-64), are in these contracts voluntarily, thus because they did not want a permanent job (Eurostat).

Table 1-1: Numerical flexibility options for workers and companies

	Flexibility for workers	Flexibility for company
Working time		
- flexible working hours/ schedule	√	√
- working time accounts	√	√
- annualisation of working hours	√	√
- part-time (reduce or increase in working hours)	√	√
- unusual hours ^{a)} (i.e. night, weekend shifts)	▲ (if voluntary)	√
- shift work ^{a)}	▲ (if voluntary)	√
- overtime ^{b)}		√
Leave schemes		
- parental/child-care leave		
- care leave	√	
- training/educational leave		
- sabbatical/career breaks		
Temporary work ^{c)}		
- fixed-term contracts		
- temporary agency work		√
- others		
Retirement schemes ^{d)}		
- phased retirement	√	√
- early retirement		

Source: Chung, 2007

a) Some workers might voluntarily choose to work in unusual hours to balance their work and life needs. However, when this is the case, it may be because there are no other proper work-life balance facilities available for workers. Thus the voluntarily character of unusual hours can be questionable. Also, even when used voluntarily, in many cases unusual hours can have negative effects to the workers on the long run in respects to health issues (Houseman and Polivka, 2000). The same could be said about shift work.

b) Although overtime could be used for workers to increase income, this is because their initial incomes are insufficient, and also even if used for this reason, this is not a flexibility need of workers but rather used for their security needs.

c) In countries where regulations on firing workers are less stringent, companies may use permanent workers for short periods instead of temporary workers. However, this can only be examined through job or contract duration and not as a use of certain arrangement.

d) Retirement schemes are included here for the reasons that it is used in many European countries to lay off older workers and redistribute work from older to younger workers (see Leber and Wagner, 2007). One might say that leave schemes may be used for similar purposes, but so far there has not been much evidence of this so leave schemes are not seen as such.

4. Various levels of regulation and labour market flexibility practices

There are various levels at which labour market flexibility can be examined. Anxo and O'Reilly (2000) distinguish five levels at which regulations can be initiated and implemented. Firstly there is the supranational level, where regulations are implemented through the European Union directives such as the working time directive³. Secondly, there is the national level, where universal application of statutory legislation is used. Thirdly, there is the branch or industry level in which through collective bargaining applied to a range of firms or sectors regulations are implemented. They also distinguish the plant or company level (fourth level), which uses localized collective agreements, and lastly, at the fifth level, is the purely individual level through which the employment contract concluded between employer and employee defines the regulations. They note that the importance of the different levels varies between countries according to the strength or weakness of the social partners in collective bargaining (Anxo and O'Reilly 2000: 71~76).

Using the Anxo and O'Reilly classification, similarly, we can derive various levels of flexibility practices. The model is as shown in Figure 1-1. Here, we can identify five levels at which labour market flexibility practices can be measured, the EU, country, sector, company, and individual level. Unlike the Anxo and O'Reilly specification, in our model the last level, thus the individual level, entails the take up of a certain arrangement by an individual, not necessarily the contract made between the worker and the employer. Actually the individual contracts or negotiations made between one employee and employer can be included as being a part of the company level practice, examined at the establishment level. The reason for this difference is that here we are not examining regulations and implementations per se, but practices. As in the other levels where practices result in regulations, the practices at the individual level are realised by the decision of the individual, when he or she decides on the take up of a certain flexibility arrangement. This does not necessarily have to

³ The EU working time directive passed in 1993 sets the maximum working hour to 48 hours a week, as well as regulations on rest, holidays and night shifts. However, it also includes the individual opt-out clause where workers can be asked to work more than 48 hours a week given that they sign an individual agreement with their employers. For more see: <http://ec.europa.eu/social/main.jsp?catId=706&langId=en&intPageId=205>

be done through the contract agreement between the employee and the employer. Also, this take up is not always voluntary and can also be enforced by the company. We can think of an example of where overtime is enforced on the individual against his or her will. Here this is considered as a ‘take up’ as well, though here take up does not entail voluntariness of the use of the arrangement for one’s needs.

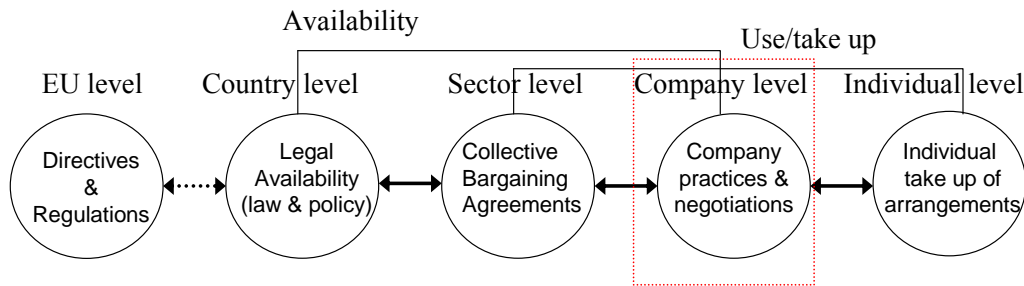


Figure 1-1: Various levels of flexibility practices and focus of this study

Of the various levels, in this project we examine the flexibility practices observed at the establishment or the company level. Data on the establishment level contain take up information in one sense, and in another, availability of arrangements. It is information on take up, for the data shows us whether a firm has taken up a certain option available in the institution, such as in laws, policies or sector level collective bargaining agreements. However, it also provides us with the information on the availability of options for workers. In most cases, employees cannot autonomously choose to take up certain working time arrangements, for the option availability depends on the structure of the company they are employed in (Riedmann et al., 2006). For instance, even if part-time work is available by law in most countries it is not entirely available for all workers. If the firms do not choose to implement these flexibility options, it is almost impossible for a worker to use it. In this sense working time arrangements at the establishment level is *the final availability* which “sets out *the possibility and limits of the employees* to adapt their actual working hours to their personal needs and wishes” (Riedmann et al., 2006: 1).

Another reason why examining flexibility at the company level is important is that company level practices do not necessarily reflect national level institutions. Labour market flexibility indexes derived from the country level do not always represent what actually happens at the company and/or individual level, for institutional frameworks and shop level practices will not necessarily accord with each other. This is true because flexibility measures are implemented or taken up as strategic measures to overcome institutional restrictions within countries.⁴ This can be seen as discrepancies between the various levels at which flexibility can be examined, or the discrepancies between the efforts and practices of flexibility⁵. Institutions, such as existing laws and policies, are efforts the government or other social partners made in trying to develop a certain character within the labour market of the country. Policies that aim to achieve certain goals do not necessarily translate into actual practices because other factors, such as the need for flexibility as well as their capacity to provide it, come into play when companies choose their flexibility strategies and they can act rather autonomously from institutional environments (Bredgaard and Tros, 2008). Subsequently, we can expect similar behavioural patterns between companies in very different institutional environments, thus in different countries, yet similar in other aspects such as sector or company characteristics due to the similarities in their needs for flexibility. This is more likely to be the case for the organisation of working time. Although leave schemes are usually decided at the national level, the regulatory framework of flexible working time is dealt with more so at the sector level and the specifics of working time are often dealt with at the company level. Also, employers are increasingly calling for decentralisation of working time bargaining to the company level (Keune, 2006).

Through empirical data on establishments, Den Dulk (2001) and Den Dulk et al. (2005) show how in countries where advanced statutory provisions are present, employers are not likely to introduce additional work-family arrangements. Rather in countries where public provisions are near absent, this leads to larger employer

⁴ For example, previous literature show us that temporary contracts are used more in countries where there are strict regulations on firing regular workers (Dolado et al., 2001; OECD, 1999; Chung, 2005; Polavieja, 2006).

⁵ For more on the differences between efforts practices and outcomes see Chung and Wilthagen, 2008 or Bekker and Chung, 2009.

involvement, where employers introduce workplace arrangements according to their specific needs. Brewster et al. (1994) also find that despite the fact that countries are a strong determinant in the use of flexible arrangements within a company, there is little correlation between legal regulation and the movement towards flexibility. They note that within each set of national laws there are differences in the way different sectors and different organisations use flexibility. This could be explained through perhaps organisational cultures, experiences and expectations (Brewster et al. 1994: 190; Horrell and Rubery 1991).

Despite this importance of examining the company level, most studies of flexibility focus on the individual, or the national level using aggregate data of individuals' behaviours. However, the main reason for this limitation was that company level data were not readily available, especially those which cover a wide range of flexibility arrangements and are comparable across a large group of countries. We overcome this limitation through the use of the ESWT data set. More on the data set is described on chapter 2.

5. Company strategies and components

As the importance of examining company level practices is apparent, the question remains how one should examine company practices on working time. Although there have been studies on companies' take up of flexibility and more specifically, working time arrangements, not many studies examine the combination of various arrangements. The examination of the use of single arrangements separately is not useful in examining what is happening on the shop floors, and what individuals are exposed to with regard to flexibility. In the words of Kalleberg et al., "examining the use of flexible staffing arrangements one at a time neglects the reality that organisations may use various combinations of staffing arrangements." (Kalleberg et al, 2003: 539). The use of an arrangement within the company will have different implications depending on what other arrangements have been used simultaneously. There are substitution as well as complementary effects between the various arrangements and they are not separate from each other. To gain a complete picture of

flexibility behaviour of the firm and a deeper understanding of how and why establishments use them, we must examine the combination and organisation of various forms of working time flexibility. Kalleberg et al. (2003) argue how flexible arrangements should be examined in bundles because sometimes it is difficult to distinguish the various arrangements organisations use, such as distinguishing between the different kinds of employment intermediaries. In addition they maintain that “the use of bundles captures the basic distinction between types of flexible staffing arrangements” (Kalleberg et al. 2003: 539~540).

For these reasons, in this project we take the flexible firm approach which examines the labour market flexibility through the behaviour of firms to understand how firms combine and organise various flexibility practices of companies. Using this approach we can draw various working time flexibility latent components or bundles. Examining working time flexibility bundles will give us the overall picture of the flexible strategies made in the company, unlike the case when flexibility arrangements are examined separately.

6. Cross-national, cross-sectoral variance of relationships

In this study, we take the multilevel approach for our analysis. In most studies in the fields of sociology and labour markets, it is common to presume that we can find an average relationship that is applicable to all countries in the analysis. However, this is not always the case. Due to the differences in the country characteristics, may it be cultural, institutional, or other socio-economic situations, the relationships we find between company practices of working time and their determinants and implications may also be divergent. Brewster and Hegewisch (1994) describe human resource practices of companies being embedded within the sector, and national culture and structure, as well as the organisational structure. This entails that organisational characteristics are also embedded within the national and sectoral culture or structure. This suggests a cross-national variance in the impacts of company or organisational characteristics, due to the fact that they are embedded in a larger sector or national environment, thus having different implications in different sectors and countries.

This means that some of the company level determinants will have different impacts in explaining companies' working time practices, depending on which country and which sector it is in. The same goes for the impact of working time practices on performance, where there can also be cross-sectoral and cross-national variance. These types of variances can be captured by using a multilevel regression model, which considers the data to be hierarchical. This allows us to examine the contextual effects, thus how company practices and organisational characteristics could have different implications due to the fact that they are embedded in different countries and sectors.

In addition, the multilevel approach allows us to examine the reason behind the country variances found. In most normal fixed-effects regressions, what we find is that there are country variances, but we cannot explain the reason behind it, due to the problems of degrees of freedom. In the fixed-effects models we can examine the effect of a single country level characteristic separately, by including it in the model. However, in this case we cannot include the country dummies nor can we control for other country level characteristics that may also be relevant in addition to the one included in the model. Thus, in most regression analyses, we were not able to peer into the black box of the reasons behind country differences. Using the multilevel approach, since countries are considered to be levels and not fixed-effect variables, we can include various country level characteristics into the model, while including other determinants of companies' working time practices, that is various company characteristics. In other words, we can finally open and decipher the black box of country variances that one can find between company's flexibility practices. More on this approach can be found in chapter 2.

7. Research questions and hypotheses

In this chapter, we have reviewed some of the major works on labour market flexibility and working time. Despite the numerous and increasing number of studies on labour market flexibility, there are many limitations to these existing studies. Firstly, most studies on labour market flexibility tend to focus mainly on the

flexibility options used for the needs of employers excluding the needs of employees from the analysis. Others only examine the use of flexibility for workers, in the context of provision of work-life balance, without regarding the company need based flexibility options. In other words, the examination of labour market flexibility incorporating both the employees as well as employers is needed. Secondly, we have noted that company level flexibility practices are important in terms of what this shows us about the real practices of flexibility as well as providing us the final availability conditions that workers are faced with. However, we also find that comparative studies on labour market flexibility are mostly focused on country or individual levels, and company level analyses are still lacking. One of the main reasons for this is the lack of available comparable data, which we overcome in this project through the use of the ESWT data set. Thirdly, most studies on working time flexibility have mostly been on actual hours worked or on the use of separate individual arrangements. However, to arrive at a more complete picture of what is happening on the shop floors, we must examine the combination and organisation of various flexibility arrangements. For this reason, in this study, we examine the use of various bundles of working time flexibility, through the use of the concept working time flexibility components. Lastly, many studies fail to acknowledge the cross-national, cross-sectoral differences in the relationships found with flexibility and its determinants as well as its implications. Due to the differences in the environments each company is placed in, flexibility may mean different things, in addition to the different reasons why they use it. This limitation is overcome by the use of a multilevel model, which examines data hierarchically, allowing for the impact of factors to vary across countries. In addition, through the use of this model, we are able to examine the reason behind the differences between countries in their company's practices of working time, which is another gap in the literature of flexibility.

Using this as our basic framework we can arrive at the following research questions and respective hypotheses.

The first research question would be to see if there are indeed components or bundles of working time flexibility, and if so what they are. Thus we come to the first research question of this project.

Research Question 1: Are working time flexibility arrangements separate entities or can bundles of working time flexibility be found? If so, what types can be found?

The first hypothesis would be that we can find working time flexibility components.

Hypothesis 1-1: Working time flexibility arrangements can be bundled into components.

The competing hypothesis would be that there are no bundles or groupings of working time arrangements and that all arrangements should be considered as separate entities. The second aspect of interest is of the latent characteristics working time arrangements can share, what characteristic is the most dominant one that would be represented when the arrangements are bundled? As we have discussed in the previous section, there has not yet been concrete empirical work on the division of working time flexibility options. However, theoretically they have been divided based on the needs they serve, thus those for workers/employees and those for companies/employers.

Hypothesis 1-2: The grouping of arrangements is based on whose needs they facilitate, thus those for employers versus those for employees.

The competing hypothesis would be that working time flexibility can be divided into those which are full-time based, and those which are part-time based as in the model argued by Rubery and Grimshaw (2003) (See chapter 3).

In addition, we suspect that the groupings found are not placed in a linear continuum but rather two different dimensions. The reason for this is that we believe that strategies to promote flexibility for employees and employers are not necessarily at odds with each other, for some arrangements both ends of the flexibility continuum can be met in a positive sum manner. In other words, one could have high levels of flexibility for employees while sustaining high levels of flexibility for employers. In a linear relationship, an increase in the flexibility for employees would mean an automatic decrease of flexibility for employers.

Hypothesis 1-3: The components of flexibility are not points of a linear continuum but rather dichotomous.

The next question that is our interest is what can explain for the variance found in working time practices across European companies. Our first interest is whether country differences explain for the larger amount of variance found, or if there are larger variances found between companies within countries. Thus we can formulate the following question.

Research Question 2: Do country differences explain for most of the variance found between companies in terms of their working time practices?

Previous literature on labour market regimes is based on the assumption that there are country differences, cross-national variances, that is one of the, if not the most important factor in explaining the actual practices of the labour market of individuals and companies. Most studies on the welfare states are based on the presumption that, although there are variations across countries, the behaviours of actors within the country are rather homogenous. Thus, we assume that due to country level characteristics, actors within the country will be made to act similarly. This entails that we are under an assumption that the variance between countries is big and larger than the variance between other things, such as sectoral differences, size of the company, gender, or other company or individual characteristics. This is due to the belief that individuals and individual companies are restricted within the country due to their institutional frame, cultural and social boundaries. However, this does not necessarily mean that one is completely restricted within these boundaries. This becomes more important when we are dealing with the issues of labour market flexibility options. Labour market flexibility arrangements can be developed or taken up by companies or perhaps individuals as a coping mechanism to overcome the restrictions of the society. In addition, each individual and company will have different needs and capacities in taking up various flexibility arrangements. Based on this, we believe that in fact there are much more variances between companies within countries and within sectors. Thus we come to the following hypothesis.

Hypothesis 2: Country differences do not explain the majority of the variance found in the working time practices across European companies, and large differences can be found between companies within countries.

Then, the question to be asked would be what can explain for the variance found between companies' working time practices. The determinants can be distinguished into the company characteristics that can explain for the within country variance, as well as some between country variance- thus the compositional effect of country variance, and the country characteristics that can explain for the rest of the variance between countries. Firstly, we examine the company characteristics, and the respective research question and hypothesis can be as follows.

Research Question 3: What kinds of company characteristics determine the working time practices of European companies, and are there cross-national variances in these effects?

Hypothesis 3-1: There are several company level characteristics, such as its size, line of business, composition of its workforce, its industrial relations aspects, work load fluctuations etc., which can explain for the use of various working time flexibility bundles.

In addition to examining the various company level determinants of companies' working time practices, our interest is to see how these determinants could have different implications across countries. Thus an additional way in which countries could impact company practices.

Hypothesis 3-2: There is cross-national variance in the effect of various company level determinants on working time practices.

Next come the question of what exactly about the country explains for the cross country variance found in working time practices.

Research Question 4: What can explain for the cross-national variance of working time practices of European companies?

In chapter 5, we will find the reason behind why there are national variances between the 21 European countries under examination, in regards to the provision/use of working time arrangements used in their companies. The variance in company behaviour explained by countries can result from numerous factors. This can include institutional environments, such as law and policies on labour markets as well as industrial relations aspects, labour market and economic market situations, cycles and structures, as well as various cultural aspects such as gender division of work, general societal attitude towards the issues of work-life balance etc. However, our main interest is to see the impact of institutions, in comparison to other aspects of the country. This is an interesting point of research, given that labour market institutions have been criticized for making labour markets rigid and have been considered as the main offender in decreasing the labour market adaptability of welfare states.

Hypothesis 4: Labour market institutions can explain for the cross-national variance of the use of working time flexibility arrangement bundles, more than other country characteristics.

Lastly, we examine the consequences of the use of various working time practices. Here, our interest is on the performance, more specifically HR related performance outcomes of the use of various types of working time practices. The relationship is hard to decipher, since the direction of the relationship will not be clear cut. We can expect reverse causality in such relationships. The outcome variables can also be endogenous with the firm's other HR behaviour and not necessarily results of the use of working time arrangements. In addition, it is hard to say how working time arrangements in themselves will result in certain outcomes without putting other managerial/production practices into consideration. However, we can still loosely link the outcome results of the firms with their working time flexibility practices to infer their possible impact.

Research Question 5: What are the performance outcomes of different working time flexibility practices?

There have been several studies on the impact of providing better work-life balance arrangements on the productivity and loyalty of workers. When workers can manage

their life with work better, they have less stress and sickness, which would help improve morale. These practices also prove to be profitable to employers as well, through reduced absenteeism, improved recruitment and retention, thus enhancing overall productivity (Bevan et al., 1999; Evans, 2001; Dex and Scheibl, 2001; Dex and Smith, 2002; Yasbek, 2004; Seeleib-Kaiser and Fleckenstein, 2008). On the other hand, although the main purpose of introducing employer-centred working time flexibility arrangements is to increase cost efficiency as well as to meet demands, they have also been linked with problems, e.g., concerning health and safety issues (Dembe et al., 2005; Caruso et al., 2004; EIROonline, 2005b). Based on this we can come to the following hypotheses concerning working time arrangements and performance outcomes.

Hypothesis 5-1: The use of employee-oriented working time flexibility arrangements can be linked to better results in company performance in regards to human resource related issues, and due to this, better results in terms of overall productivity and economic performances.

Hypothesis 5-2: The use of employer-oriented working time flexibility arrangements can be linked to worse results in company performance in regards to human resource related issues, and due to this, worse results in terms of overall productivity and economic performances.

In addition, we believe that due to characteristics of the country and sector, as well as their different starting points in regards to problem issues as well as the use of working time flexibility, there can be country and sector variances in the relationship found between the use of working time flexibility and performance outcomes.

Hypothesis 5-3: The relationship between the use of working time arrangements and performance outcomes varies across countries

Hypothesis 5-4: The relationship between the use of working time arrangements and performance outcomes varies across sectors.

If we summarize the questions addressed in this study in a graphical interpretation, it can be shown as the following figure 1-2

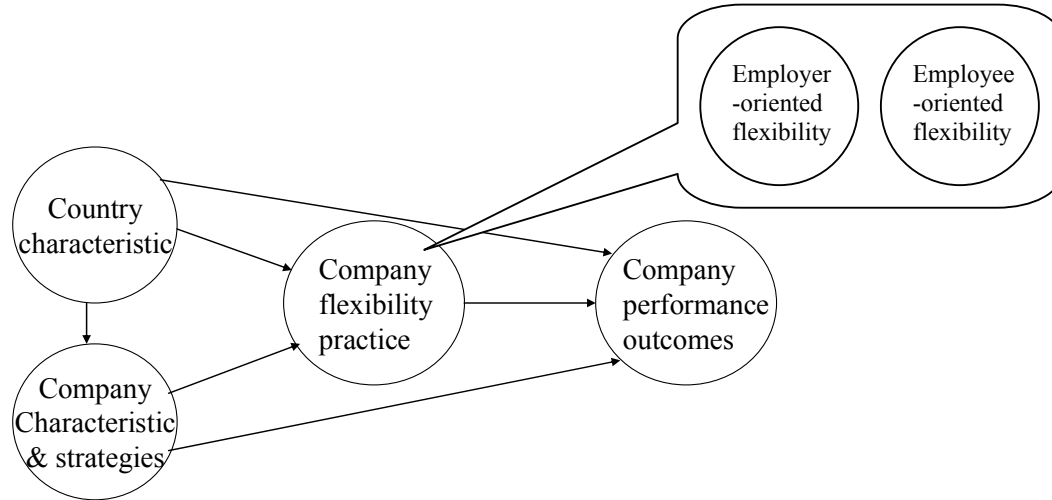


Figure 1-2. Framework of thesis, the determinants and implications of company flexibility practices

Figure 1-2 depicts the determinants and implications of company flexibility practices. We can see that there are company characteristics and strategies, as well as country characteristics, that can explain company practices of flexibility, and that these flexibility practices along with company and country characteristics impact company performance outcomes. In the box in the right hand corner, as mentioned in hypothesis 1-2, we predict that company working time practices can be distinguished as employer-oriented practices and employee-oriented practices. Also from the figure 1-2, we can see that country characteristics can have not only direct impacts on company practices, but also indirect impacts, through changing the nature of company characteristics for each country (hypothesis 3-2). Performance outcomes can also be directly and indirectly influenced by company and country characteristics, the latter through their impact on company flexibility practices. Thus, company flexibility practices could have different impacts in different countries and different types of companies (hypothesis 5-3). These indirect influences and arrows also represent how there can be cross-national variances in the relationship found not only between company characteristics and company flexibility practices, but also company flexibility practices and performance outcomes.

8. Outline of this book

The structure of this book is as follows. In the next chapter (chapter 2) we will explain the data sources used in this project as well as the methods used to test the hypotheses, notably factor analysis and multilevel modelling. In chapter 3, we examine the question of whether bundles of working time arrangements exist. We see how they can be grouped based on their shared latent characteristics, which can also reflect the working time strategies companies take. Chapter 4 examines the question, how much variance of working time practices between European companies can be explained by country differences. This is done by partitioning the variation found of company working time practices, by country, sector and company levels. In addition, some of the key company level characteristics that can explain the use of certain working time bundles of a company are found. We also find some company characteristics that have different impacts in different countries. In the following chapter (chapter 5) we explain the country variance found in companies' working time practices. In other words, we examine various country level characteristics that can explain the differences found between countries, pondering the extent to which institutions of countries matter. Our last analytical chapter, chapter 6, looks into some of the performance outcomes that are linked with the use of working time arrangements. In other words, to see what kinds of outcomes one can expect when a company takes up a certain working time strategy. Chapter 7, the last chapter summarises the conclusions and offers policy implications of the analytical outcomes derived in the previous chapters.

Chapter II. Data and Methodology

1. Introduction

In this chapter, we describe the main data source used in this study, namely the European Establishment Survey on Working Time and Work-life Balance (ESWT) 2004/2005 data set, as well as the methodologies used in the analytical chapters, namely factor analysis and multilevel regression analysis. Here we not only describe what these methods entail, but also discuss their respective advantages and disadvantages and some technical methodological choices made for the analyses done in the following chapters.

In the next section (section 2), we examine the ESWT data set, and the issues concerning the data including some issues concerning the definition of the variables chosen. In the third section, we examine the main methodologies used in this study, namely factor analysis and multilevel analysis, as well as the choices made in the use of these methods. We especially go in depth on the issue of variance calculation methods used in multilevel modelling, to examine the variance explained through the models.

2. Data Set

2.1. About the ESWT Data set⁶

The ESWT survey was launched by the European Foundation for the Improvement of Living and Working Conditions (Eurofound) for 21 European countries. These countries are: the 15 ‘old’ Member States of the European Union (EU15), that is, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom, and six of the new Member States, namely, the Czech Republic, Cyprus, Hungary,

⁶ This part is largely drawn from Chung et al. (2007).

Latvia, Poland, and Slovenia. This study examines the establishment level. An establishment can be defined as “a single physical location where business transactions take place and for which payroll and employment records are kept.” (US Consensus Bureau website) In comparison, companies or firms can be defined as being “groups of one or more establishments under common ownership or control” (US Consensus Bureau website), where a single-unit firm/company owns or operates only one establishment and a multi-unit firm/company owns or operates two or more establishments. Although the ESWT questionnaires were distributed at the establishment level, it also includes a question to indicate whether or not the establishment was of a single-unit company or not. In addition, for the multi-unit companies it was also asked if the establishment was the headquarters of the company. Throughout this study, we do not make a strict distinction between companies and establishments, and thus treated as synonyms. We expect that not distinguishing between single unit and multi-unit establishments will not make a large difference for our analyses. However, this difference may be of significance when we consider the performance outcomes of the establishments, which is done in chapter 6. In this chapter we do control for the difference between single-unit establishments with multi-unit establishments, and between these if they are the headquarters of if they are the subsidiaries.

Overall, the ESWT covers over 21,000 establishments, both in the private and public sectors, personnel managers and – where available – formal employee representatives (for example, shop stewards and members of the works councils) were interviewed about working time arrangements and work–life balance in their companies. Data obtained from the ESWT are representative for all establishments with 10 or more employees. The survey covers private and public establishments from virtually all sectors of economic activity, with the exception of ‘agriculture’, ‘forestry’, ‘private households’ and ‘extraterritorial organisations’. In these sectors, the number of companies employing 10 or more employees is negligible in the countries surveyed. The sample design provided for a control of the representative

distribution of interviews among the two main sectors: ‘Industry’ (NACE⁷ C – F) and ‘Services’ (NACE G – O). The specific sectors included are, for the industry sector: Mining and quarrying (C), Manufacturing (D), Electricity, gas and water (E), and Construction (F), and for the services sector: Retail and repair (G), Hotel and restaurants (H), Transport and storage (I), Financial intermediation (J), Real estate, renting and business activities (K), Public administration (L), Education (M), Health and social work (N), and Other social services (O). In addition, within the data set there is an establishment weight, which allows representative distribution of not only sectors but also company sizes for each country (for details on sampling, see Riedmann et al, 2006, p. 57).

Interviews for the survey were carried out via telephone in the autumn of 2004 in the EU15 countries and in the spring of 2005 in the six NMS countries. TNS Infratest Sozialforschung Munich coordinated the fieldwork for the survey. In total, 21,031 personnel managers were interviewed, along with 5,232 employee representatives from the same establishments. Unless otherwise stated, all figures in this report show the distribution of establishments, not of employees (more details on the survey methodology can be found in Riedmann et al, 2006, pp. 55–66). Of the survey, this chapter uses the data from the manager survey for it covers a wider and more representative scope of companies and due to the reliability of the answers. Considering the scope of the jobs, managers usually have better information on take up and availability of schemes than the employee representatives.

The ESWT survey covers a wide range of arrangements of which data were not available in other sources, especially those that were comparable across countries. The arrangements that have been surveyed reflect the outcomes of previous studies that examine types of arrangements that are used in practice to enhance work-life balance for workers along with flexibility strategies that are used by companies (See Anxo et al., 2005, Anxo et al., 2006). The list includes the major arrangements that are currently being used in companies throughout Europe.

⁷ NACE (Nomenclature statistique des Activités économiques dans la Communauté Européenne) is the statistical classification of economic activities in the European Community. For a specific list used in this survey see http://www.fifoost.org/database/nace/nace-en_2002c.php

2.2. Use versus availability

In the ESWT data set, the questions asked to the managers on working time and work-life balance arrangements can be distinguished into two types. There are those that ask the managers whether or not the arrangements were being used in the company, and if so, what the proportion of workers using it was. The second type of questions addressed whether or not the company made certain arrangements available for the workers in the establishment. Thus we have information on the actual use of certain arrangements on one hand, and the availability of arrangements on the other. The difference between the two types of questions is due to the characteristics of the arrangements.

The take-up of the employer-centred arrangements, such as overtime and unusual hours, is in most cases decided by the discretion of managers or the company, based on their need for such time variations. Thus at the company level, it is relevant to measure whether or not the company has used the arrangements which were made available for use by either national legislations or through sectoral agreements. For example, companies are allowed to use overtime through working time laws that are in place in national or sectoral regulations. However, if companies do not wish to use such arrangements, they are not obliged to use them. Only when the need to use such arrangement arises, due to increase in workload or through other reasons, then would the employers use the arrangements. In this type of question, the proportion of workers who use the arrangement was asked on a categorical basis. However, we do not use this information in this study because it is not available for all arrangements included in the study (see Table 3-2 in chapter 3 for a more detailed view). In addition, using the data on proportion of workers using the arrangements is not without problems, for it is unclear whether or not employers are reliable sources for such information. For example, in case of overtime there may be workers that work overtime without the employers being notified as unpaid overtime.

The take up of the employee-centred arrangements, such as family-friendly policies, is decided by the discretion of the workers themselves. Companies can make certain arrangements available for workers to use, but it can only be workers who choose to use them when they are in need of such arrangements. For example,

parental leave can only be taken up when the workers become or are parents, and want to take it up. Thus, in these cases the survey questions have to ask whether the companies make the arrangements available for their workers or not. The availability of these arrangements does not necessarily have to stem from national or sectoral agreements, but can come from corporate policies at the establishment level. For these types of questions, the proportion of workers using the arrangements was not asked, for reasons that the use of the arrangements depends heavily on the situation of the workers and their needs, and not necessarily the policies of companies.

In this book, we focus on the information of whether or not a company is using a working time arrangement, or has made the arrangement available. Due to the design of the survey, when a company uses the arrangement for at least one of its workers, or when it makes the arrangement available for at least one of its workers, the company is considered to be using the arrangement. Thus in this case, larger companies have higher possibilities to use the arrangements. This is not necessarily a limitation, if the focus of the study is to measure the diversity of arrangements provided/used by the company to enhance working time flexibility. In this book, we presume that the availability and the use of the arrangements are not geared only towards a specific group of workers, but to the general work force. Throughout the book, we measure the provision or the use of various working time arrangement, not the extent to which it is being used. The extent to which arrangements are used would also be an interesting topic for research, however it is not the one explored here.

3. Methodologies

In this section, we examine the main methodologies of analysis used in this book, that is factor analysis, used in chapter 3 to derive the dependent variable for this book, and multilevel regression analysis, used in chapters 4 through 6.

3.1. Factor analysis: Principle Component Analysis

Definition

The main purpose of factor analysis is to bring correlated variables together under a more general underlying variable, or to explain the variance in the observed variables in terms of underlying latent factors (Habing, 2003:2; Garson, 2009). Factor analysis techniques are applied when the goal is to detect structure in variables, that is, to classify them, and reduce the number of variables (Statsoft, 2008). Factor analysis also assumes that internal attributes account for the observed variation and covariation across a range of observed surface attributes (Tucker and Mc Callum, 1997). The grouping of arrangements found will be based on their covariation, thus how they are being used together, which in turn is indicating that they share a similar latent characteristic. For this reason, the variables that are included in the analysis drive the results found. Variables can contain various types of latent characteristics that can lead to several types of groupings.

Factor analysis was initially used in the fields of psychology, but more and more, researchers in the field of labour markets are incorporating this method to simplify the complexity of reality into manageable concepts (Chung and Wilthagen, 2008; for example, CEC, 2006a; CEC, 2007b; Philips and Eamets, 2007; Bekker and Chung, 2009). PCA transforms a number of correlated variables into a smaller number of (uncorrelated) variables called principal components, and this method is often preferred as a method for data reduction (Statsoft, 2008). In this project, we use factor analysis to reduce the complexity of the variables in the model. In other words, factor analysis, and more specifically, Principal Component Analysis (PCA) synthesizes the information contained in the full set of ESWT variables into two or three key measures.

Communalities

Communalities are the proportion of variance of a particular item (variable) that is explained by the derived factors. This variance could also be understood as the variance each item has in common with the other items. The proportion of variance that is unique to each item is then the respective item's total variance minus the

communality (Statsoft, 2008). Low communalities indicate that the factor model does not explain the data very well and that there is little relation between the variables. However, the communalities should be interpreted in relation to the extent to which the variable plays a role in the interpretation of the factor. Thus, even if a variable has a small communality coefficient, if it plays a significant role in defining the factor, it is meaningful to include the variable (Garson, 2009). PCA assumes that all variability in an item should be used in the data (Statsoft, 2008).

Number of factors

The number of factors extracted can be based on several criteria, but the most commonly used method is the Kaiser-criterion. The Kaiser-criterion retains factors with eigen-values greater than 1, which means that the factor has to extract at least as much as the equivalent of one original variable (Statsoft, 2008; Garson, 2009). If we use this, we are relying on statistical significance of the analysis outcome to conclude our results. However, with factor analysis, one could restrict the number of factors according to the hypothesis based on theories or previous studies. In this study we use both methods and compare the outcomes resulting from the two different approaches.

Rotation methods

In the PCA method, there are several rotation methods one could apply. Rotation in PCA is when the axis of the model is rotated to obtain clearer patterns of loadings, that is, the correlations between the variables and the derived factors. One can use the orthogonal method or the oblique method. The orthogonal method presumes that there are no correlations between the factors derived, thus keeping a 90° angle between the two factor axis. On the other hand, oblique methods allows for correlations between factors, relaxing the 90° axis assumption, and the new axes are free to take any position in the factor space (for more on rotation methods see, Abdi, 2003; Statsoft, 2008). In this case, the degree of correlation among factors is usually small, because two highly correlated factors are better interpreted as only one factor. Oblique rotation methods are used to relax the orthogonality constraint in order to gain simplicity in the interpretation (Abdi, 2003: 982). However, oblique rotation outcomes may be harder to interpret if there are no strong theories on the reason behind the correlation of the variable.

The most common of the orthogonal rotation method is varimax and for oblique rotation is promax (Abdi, 2003; Statsoft, 2008). The varimax rotation criterion maximizes the sum of the variances of each vector, thus providing high factor loadings per item. In other words, each factor has a small number of large loadings and a large number of zero (or small) loadings (Abdi, 2003: 980). Varimax is considered to be a simple and efficient method because each variable is associated with one or small numbers of the factors found, and each factor can be represented with a small number of variables (Abdi, 2003: 980). The promax method computes the least square fit from the varimax solution to the target matrix. Of the oblique methods it has the advantage of providing fast and simple outcomes. Promax rotations are interpreted by looking at the correlations between the rotated axis and the original variables, and these correlations are interpreted as loadings.

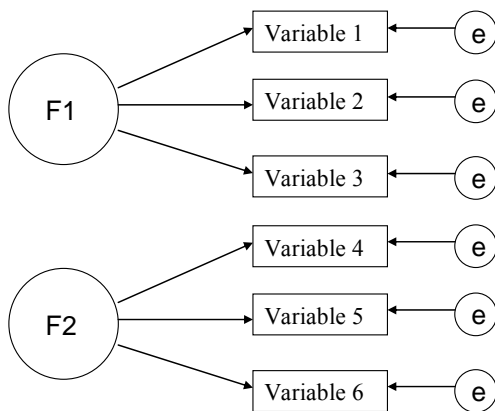


Figure 2-1. A Graphical representation of factor analysis (Orthogonal)

Note: for oblique methods, F1 and F2 would be allowed to correlate to one another

Figure 2-1 depicts a simple graphical representation of a factor analysis, where six variables were included in the analysis to derive two factors. As we can see in the figure, variables 1 to 3 is explained by factor 1 and variables 4 to 6 is explained by factor 2. Thus we can conclude that variables 1 to 3 can be included in one group, sharing factor 1 as the underlying latent character, and variables 4 to 6 into another

group, sharing the latent character represented in the figure as factor 2. Here the factors are presumed to be not correlated, thus in an orthogonal relationship. In an oblique relationship the two factors would be allowed to correlate, thus having a double sided arrow between the two factors. In addition, in the figure the variables are assigned to one factor each, however, this is not necessarily the case. As we show in our analysis in chapter 3, there can be situations where one variable has approximately equal loadings on both or several factors.

In chapter 3, factor analysis, more specifically, PCA will be used to derive components of working time, based on the variables used in the analysis. The factor scores will then be used as the dependent variables in the rest of the book. More detail on the specific analysis methods used can be found in chapter 3.

3.2. Multilevel analysis

Definition

Multilevel analysis, which is also known as random-effects models, hierarchical models, or mixed models, considers the data structure as being hierarchical where one level is *nested* in another (Hox, 2002). Some examples of this would be individuals within a region, pupils within a class within a school, individuals within a family within a country, and for our study, companies within a country. Multilevel modelling is used when it is presumed that the individuals, or other level 1 units, are subject to the influences of groupings (Rasbash et al., 2009). Although in the past multilevel modelling was used only by specialists, after the wider availability of multilevel analysis software, there has been a surge of interest in multilevel analysis in the fields such as psychology, sociology and medicine (Hox, 2002:ix; see DiPrete and Forristal, 1994 on the discussion of application of multilevel models in sociology).

In this book, we use a two-level multilevel model, which considers establishments (level 1) to be nested in a country (level 2). By considering that an establishment is nested in a country, we can see the contextual effects. In other words, we can see how establishments behave differently due to the fact that they are

grouped into, or located in different countries. Through this we can examine the effects of the unobserved characteristics of being within a country on the practices of working time of companies. In addition, using a multilevel model, we are able to see how company level predictors can also have contextual effects, thus having different implications in different countries. This is considered through the use of the random slope model. Also in this study, we presume that there are not only company level characteristics but also country level characteristics that can affect the working time practices of companies in Europe. Since the focus of our study is not only on the establishment level but also on the country level determinants, a multilevel analysis approach is useful, for we can include determinants from both levels in the model simultaneously. Figure 2-2 depicts a graphical representation of the two-level multilevel model used in this study. As we can see in Figure 2-2, establishments are nested within the country.

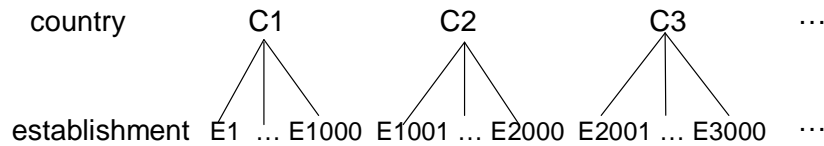


Figure 2-2. Two-level multilevel model used in this study

Country as a level

Strictly speaking in multilevel analyses, all levels should be from a random classification. This implies that all units or groups could be regarded as a random sample from a wider general population of units or groups without fixed characteristics. If the group represents a fixed classification of small fixed number of categories which can be defined, this is a fixed variable, not a random group, i.e., a level (Jones, 2007:35). Thus, it is debateable whether or not countries can be called a level or not. When we take countries as a level, this entails that we perceive the countries included in the analysis to be a random sub-sample of all countries within Europe or the world, and that being included in a particular country is random, rather

than of a fixed nature. This is not necessarily the case, since being an establishment of a certain country does have different implications due to institutional and cultural impacts. In addition, the 21 countries included in the analysis are not a random sample, but rather chosen based on a specific characteristic: their membership in the European Union. However for the ease of analysis, the fact that countries are often used as a level in the fields of sociology (for examples see DiPrete and Forristal, 1994; and for a more recent example in the field of labour markets see Gangl, 2003), as well as due to the fact that we are still examining a sample, 21 countries, of the total population, 27 countries, we consider countries as a level in the analysis.

The sector, on the other hand, is taken as a company-level fixed effect and not as a separate level. The only exception to this is in chapter 4, where sector is used as a level just to check the variance of each level for company, sector, and country. The reason for not examining sector as a level is that sectors cannot be seen as a random grouping, nor is it a sample coming from a bigger distribution of sectors. The 13 sector distinction in this study (NACE C-O) is of a fixed nature and the 13 sectors are exhaustive of all sectors that exist, that the survey covers. In addition, the key focus of this project is on the country and the company-levels, so using the sector as a separate level will not add any information. In chapter 6, we examine cross-sectoral variance in the effect of working time components on performance outcomes. However, this is done through the use of fixed-effects interaction terms.

Fixed effects versus random effect models

There are several differences between multilevel models from the regular fixed-effects regression models where countries are included in the model as dummy variables. Firstly, multilevel models can include level 2, country level variables into the model. In fixed-effects models, we can only examine the effect of the country dummy, but are not able to examine which specific aspect of the country causes this effect. In other words, we cannot see inside the black box of countries, due to the fact that including country dummies removes degrees of freedom from the model. In multilevel models, since countries are taken as a level and not as variables, we can include several country characteristics – contextual level 2 variables – into the model without losing degrees of freedom. Secondly, multilevel modelling enables

researchers to understand where and how effects are occurring by examining the levels of hierarchy in the population (Rashbash et al., 2009: 3). In the example of this study, we can include country level variables along with company level determinants. This allows us to see pure effects of variables from each level, thus examining the impact of country level variables when company level characteristics are taken into consideration and vice versa (see chapter 4 and 5 for further details).

We can examine the impact of country level variables on the practices of companies by using a fixed-effects model, through the use of a two step model (see Achen, 2005). One can derive country level coefficients through using country dummies in the initial fixed-effects model with company level characteristics. Then, we can model the impact of country level determinants by fitting a separate model which examines the variation of these country dummy coefficients as the dependent variable. However, there are two differences between this method and a multilevel model. Using a multilevel model we do not require a reference country when comparing countries, as is the case in fixed-effects models. In fixed-effects models, we can only examine the relative score of a country in relation to another. In the multilevel model, the average score is derived for all of the countries included in model, and each country can be modelled in respective to this average. Also, in multilevel models, we can model the determinants from several levels at the same time, which makes it more convenient and time-efficient. In addition, in multilevel models countries are considered to be cases within a normal distribution and are modelled accordingly. On the other hand, in fixed-effects models, countries are modelled separately, under the presumption that the countries do not impact one another.

Sample size

Many scholars note that for accurate modelling, a relatively large sample size is needed, especially for the upper levels (Kreft, 1996; van der Leeden, Busing, and Meijer, 1997; Maas and Hox, 2001; Hox, 2002). This is especially true for the standard errors of level-2 variances, in 2-level multilevel models. Van der Leeden, Busing, and Meijer (1997) suggest that for an accurate standard error of level-2 variances, one must have at least 100 groups, or else there can be a problem of

downward bias. On the other hand, if the interest is in the fixed part of the model, this number can be lower. Maas and Hox (2001) find that the standard errors for the fixed parameters are slightly biased downwards if the number of groups is less than fifty. For this reason, Kreft (1996) suggests the 30/30 rule, which indicates that for safe estimation of the model, one must strive for a sample of at least 30 groups, in our case countries, and at least 30 individuals or level-1 units, in our case establishments.

Hox (2002) notes that this is sound advice when the interest is in the fixed parameters of the model. However, for cross-level interactions, he suggests a 50/20 rule, thus about 50 groups and about 20 individuals per group. If the interest lies mostly in the random part of the multilevel model, thus the variance and covariance components and their standard errors, Hox suggests a 100/10 mix, which entails about 100 groups with about 10 individuals per group. However, he also acknowledges that given the limit on budget (and data), an optimal design would reflect the cost of data collection (Hox, 2002: 175). In the case of this research, it is impossible to sample more than 30 countries given that our interest is on European countries and companies. Our data currently covers 21 of the 27 EU member states, and for each country approximately 1000 companies were surveyed. This is against the rule of thumb and may result in downward bias of standard errors in the fixed parameters of the model and even more so in the variance components of the model, especially on the second level. Despite this limitation, we go ahead with the application of the multilevel model, but take this limitation into account when interpreting the results in the analytical chapters, especially when analysing standard errors.

4. Multilevel model equations

In this section, we examine some of the multilevel models used in this study.

4.1. Basic models

Fixed effects models

Before going on, we examine the fixed effects regression model to compare the difference with multilevel models. A basic fixed effects regression model can be represented as the following equation (2.1).

$$y_i = \beta_0 + \sum_j \beta_j X_{ji} + e_i \quad \forall j \in (1, \dots, J) \quad (2.1)$$

$$e_i \sim N(0, \sigma_e^2)$$

y_i =dependent variable, X_{ji} =predictors, β_0 =coefficient for constant, β_j =coefficient for predictor, e =error term

Here y_i represents the dependent variable for the case i , and X_{ji} represents the predictor variable, β_0 represents the constant or intercept, β_j represents the coefficients for each respective predictor, and e_i represents the error term or the residual for each company. As we can see there is only one error term in the equation. In this equation, it is assumed that the mean of the random term is zero and that there is no patterning of the residuals, as well as that there is a constant variability or homoscedasity. σ_e^2 represents the variation between companies conditional on the predictor variables included in the model.

Our first basic model is the one when it is presumed that there are three levels in the analysis; the country, the sector, and the company, and there are no predictors in the model. In a fixed effects model, this equation could be represented as (2.2).

$$y_i = \beta_0 + \sum_j \beta_j X_{ji} + \sum_k \beta_k X_{ki} + e_i \quad \forall j \in (1, \dots, 12), \forall k \in (1, \dots, 20) \quad (2.2)$$

$$e_i \sim N(0, \sigma_e^2)$$

y_i =dependent variable, X_{ji} = sector dummies, X_{ki} = country dummies, β_0 =coefficient for constant, β_j =coefficient for sector dummies, β_k =coefficient for country dummies, e =error term

Here X_j represents the sector dummies, in which there are 12 because there are 13 sectors altogether in our data, and B_j represents the coefficients for each respective sector dummy. X_k represents the country dummies, in which there are 20 because there are 21 countries altogether in our data, and B_k represents the coefficients for each respective country dummy.

Multilevel random intercept models

When we consider the sector and countries to be levels instead of fixed variables, we get a multilevel model represented in (2.3).

$$\begin{aligned}
 y_{ijk} &= \beta_0 + v_k + u_{jk} + e_{ijk} \\
 v_k &\sim N(0, \sigma_v^2) \quad \forall k \in (1, \dots, K) \\
 u_{jk} &\sim N(0, \sigma_u^2) \quad \forall j \in (1, \dots, J) \\
 e_{ijk} &\sim N(0, \sigma_e^2) \quad \forall i \in (1, \dots, I)
 \end{aligned} \tag{2.3}$$

Note: i = company level, j =sector level, k =country level

y_{ijk} = dependent variable, β_0 = coefficient for constant, v =country level error, u =sector level error, e =company level error

If y_{ijk} indicates the dependent variable, here working time practices of European companies (more in chapter 3), i represents the company level, j the sector level, and k the country level. Here in the equation, v_k represents the country level error term, u_{jk} represents the sector level error term, and e_{ijk} represents the company level error term, β_0 represents the constant. We can see that this is a multilevel model not only because of the subscripts found in the terms, that is i , j , and k , but also because we found not only the error term in the first level, company level, but also error terms for country and sector. We can understand β_0 as being the average working time practice for all companies in all countries in all sectors. v_k represents the differentials of the practices found for the average company in each country, u_{jk} represents the differentials of the practices found for the average company in each sector, within each country. Here the mean of the random terms for each level is considered to be zero, with a variance of σ_v^2 for the country level, σ_u^2 for the sector level, σ_e^2 for the company level.

However, as noted previously in this section, sectors are in fact of a fixed nature, thus it is problematic to consider them as a level. Thus we only use model (2.3) to partition variance for the three levels (for more on variance calculation and variance partitioning see the next section), to find to what extent each level can explain companies' working time practices. Later on in the study, we restrict the model to a two level multilevel model (see chapter 4 for more). When the analysis is restricted to a two level model, with company at level 1 and country at level 2, the multilevel model without any predictors can be represented as the model (2.4).

$$\begin{aligned}
 y_{ij} &= \beta_0 + u_j + e_{ij} \\
 u_j &\sim N(0, \sigma_u^2) \quad \forall j \in (1, \dots, J) \\
 e_{ijk} &\sim N(0, \sigma_e^2) \quad \forall i \in (1, \dots, I)
 \end{aligned} \tag{2.4}$$

Note: i = company level, j =country level

y_{ij} = dependent variable, β_0 = coefficient for constant, u : country-level error, e : company-level error

In chapter 4, we include the company level predictors that can explain companies working time practices. These predictors are represented as X_{ij} the model presented in (2.5). More on the predictors can be found in chapter 4.

$$\begin{aligned}
 y_{ij} &= \beta_0 + u_{0j} + e_{0ij} + \sum_p \beta_p X_{pij} \quad \forall p = (1, \dots, P) \\
 u_{0j} &\sim N(0, \sigma_{u0}^2) \quad \forall j = (1, \dots, J) \\
 e_{0ij} &\sim N(0, \sigma_{e0}^2) \quad \forall i = (1, \dots, I)
 \end{aligned} \tag{2.5}$$

Note: i : company-level, j : country-level

y_{ij} = dependent variable, X_p = company level predictors (fixed effects), β_0 = coefficient for constant, β_p =coefficient for company level predictors, u : country-level error, e : company-level error

We also use this model in chapter 6, when examining the performance outcomes of the use of company flexibility practices. Thus in that model, y represents the various performance outcomes examined in this study, whereas X includes not only various company level characteristics that can explain for companies' performance outcomes, but also working time flexibility components found in chapter 3. Some of the variables used to measure performance outcomes were of dichotomous nature, thus binary data which distinguishes between companies facing a certain problem with those not facing it (more on chapter 6). For such analysis we run a multilevel logistics regression. The equation could be represented as (2.6)

$$\begin{aligned}
 y_{ij} &\sim \text{Bino min al}(1, \pi_{ij}) \\
 \text{logit}(\pi_{ij}) &= \beta_0 + u_{0j} + \sum_p \beta_p X_{pij} \quad \forall p = (1, \dots, P) \\
 u_{0j} &\sim N(0, \Omega_u): \Omega_u = [\sigma_{u0}^2] \\
 \text{var}(y_{ij} | \pi_{ij}) &= \pi_{ij}(1 - \pi_{ij})/1
 \end{aligned} \tag{2.6}$$

Note: i : company-level, j : country-level

y_{ij} = dependent variable(binary), X_p = company level predictors (fixed effects), β_0 = coefficient for constant, β_p =coefficient for company level predictors, u : country-level error

In all regression analyses, we need a reference category to examine the impact various country and company characteristics can have on the dependent variable, here company working time practices. The problem with this approach is that the company chosen as a reference does not necessarily represent the average company, especially for every country under investigation since the definition of the average company will vary depending on the country. However, to keep the interpretation of the model easy and simple, we choose the reference categories based on either the largest group within the categories, e.g., manufacturing for sectors, or the aspect of the category which is of particular interest, e.g., making private companies the reference category to examine the effect of being a public company, or the median category of the given categories, e.g., 40 to 60% category in the worker composition variables. From this criteria, in our analysis in chapters 4 and 5, the reference company is a private company in the manufacturing sector that has 50 to 99 workers, where 40 to 60% of its workers are female, 40 to 60% are skilled, 40 to 60% are younger than 30, and 40 to 60% are older than 50. This company does not have a collective agreement on working time, nor an employee representative, no workload variation, is in a “quite bad” economic situation, and does not use any temporary contracts or work-life balance facilities. A similar approach was used for the reference company for chapter 6, when examining the performance outcomes of working time components.

4.2. Random slope models

In equation (2.5), there are no random slopes in our model. It only allows random intercepts, thus the variance between countries in their average company practices or component scores, to be specific. However, we can also allow for random slopes, thus allowing for various company level predictors to have different effects in different countries. When it is presumed that there is one random slope in the model, the model can be depicted as (2.7). This could be extended for many variables with random slopes as well.

$$\begin{aligned}
 y_{ij} &= \beta_{0ij} + \beta_{1j}X_{1ij} + \sum_p \beta_p X_{pij} \quad \forall p = (2, \dots, P) \\
 \beta_{0ij} &= \beta_0 + u_{0j} + e_{0ij} \\
 \beta_{1j} &= \beta_1 + u_{1j} \\
 \begin{bmatrix} u_{0j} \\ u_{1j} \end{bmatrix} &\sim N\left(0, \begin{bmatrix} \sigma_{u0}^2 & \\ \sigma_{u01} & \sigma_{u1}^2 \end{bmatrix}\right) \quad \forall j = (1, \dots, J) \\
 e_{0ij} &\sim N(0, \sigma_{e0}^2) \quad \forall i = (1, \dots, I)
 \end{aligned} \tag{2.7}$$

Note: i : company-level, j : country-level

y_{ij} = dependent variable, X_1 = variable allowed to vary across country (random effects), X_p =other company level predictors (fixed effects), β_0 = coefficient for constant, β_1 = coefficient for company level variable allowed to vary across countries, β_p =coefficient for other fixed effect company level predictors, u : country-level error, e : company-level error

We arrive at two country level variances from this model. That is the variance for the intercept (constant), σ_{u0}^2 , which shows us the variance between countries in their average company's working time practices, u_{0j} . The other variance, σ_{u1}^2 , is from the differences found in the effect of predictor X_1 on company practices of working time for each country, u_{1j} . The covariance of the two is represented as σ_{u01} . In chapter 6, we use this model to examine the cross-national effect of working time components on performance outcomes. Thus, in this model, there will be two variables allowed to vary across countries, that is, the two different types of working time components, which could be represented as X_1 X_2 . In this case, we will arrive at three country level variances, that is, σ_{u0}^2 , σ_{u1}^2 , and σ_{u2}^2 , and three respective co-variances, σ_{u01} , σ_{u02} , and σ_{u12} .

For the binary data, we use the following logistic regression model (2.8). Here we allow for the effect of working time components to vary across countries. If we presume that there are two working time components, as noted in our hypothesis in chapter 1, we arrive at the following model.

$$y_{ij} \sim \text{Bino min al}(1, \pi_{ij})$$

$$\text{logit}(\pi_{ij}) = \beta_{0ij} + \beta_{1j}X_{1ij} + \beta_{2j}X_{2ij} + \sum_p \beta_p X_{pij} \quad \forall p = (3, \dots, P)$$

$$\beta_{0ij} = \beta_0 + u_{0j}$$

$$\beta_{1j} = \beta_1 + u_{1j}$$

$$\beta_{2j} = \beta_2 + u_{2j}$$

(2.8)

$$\begin{bmatrix} u_{0j} \\ u_{1j} \\ u_{2j} \end{bmatrix} \sim N(0, \Omega_u) : \Omega_u = \begin{pmatrix} \sigma_{u0}^2 & & \\ \sigma_{u01} & \sigma_{u1}^2 & \\ \sigma_{u02} & \sigma_{u12} & \sigma_{u2}^2 \end{pmatrix}$$

$$\text{var}(y_{ij} | \pi_{ij}) = \pi_{ij}(1 - \pi_{ij})/1$$

Note: i : company-level, j : country-level

y_{ij} = dependent variable(binary), X_1 =working time component1, X_2 =working time component2, X_p = company level predictors (fixed effects), β_0 = coefficient for constant, β_1 = coefficient for working time component 1, β_2 = coefficient for working time component 2, β_p =coefficient for fixed effect company level predictors, u : country-level error

In chapter 5, we examine various country level characteristics that can explain for this country variance found in model (2.7). When we include these country level predictors, X_{qj} , we arrive at (2.9).

$$y_{ij} = \beta_{0ij} + \beta_{1j}X_{1ij} + \sum_p \beta_p X_{pij} + \sum_q \beta_q X_{qij} \quad \forall p = (2, \dots, P)$$

$$\beta_{0ij} = \beta_0 + u_{0j} + e_{0ij} \quad \forall q = (1, \dots, Q)$$

$$\beta_{1j} = \beta_1 + u_{1j}$$

(2.9)

$$\begin{bmatrix} u_{0j} \\ u_{1j} \end{bmatrix} \sim N\left(0, \begin{bmatrix} \sigma_{u0}^2 & \\ \sigma_{u01} & \sigma_{u1}^2 \end{bmatrix}\right) \quad \forall j = (1, \dots, J)$$

$$e_{0ij} \sim N(0, \sigma_{e0}^2) \quad \forall i = (1, \dots, I)$$

Note: i : company-level, j : country-level

y_{ij} = dependent variable, X_1 = variable allowed to vary across country (random effects), X_p =other company level predictors (fixed effects), X_q = country level predictors (fixed effects), β_0 = coefficient for constant, β_1 = coefficient for company level variable allowed to vary across countries, β_p =coefficient for fixed effect company level predictors, β_q =coefficient for country level predictors, u : country-level error, e : company-level error

As mentioned concerning the company level characteristics, one can also put the country variables at a median score. Although this is not done in this study, having tested and compared the results found when using centred variables with the non-centred variables, it seemed that the results do not change.

4.3. Variance and intra-class correlations

In the multilevel models, we are not only interested in the coefficients of the predictor variables, but also the variance found for each level. This is especially true for chapter 3, where one key question asked is whether countries do account for a large variance found between companies in their practices of working time. To answer this question, we examine the variance that can be accounted for by the country level, or in other words the intra-class correlation coefficient (ICC). Intra-class correlation coefficient is an indication of the proportion of variance at a certain level, and can be interpreted as the expected correlation between two randomly chosen level 1 units within the same group (Hox, 2002: 31). For the two level models (2.4), (2.5) with country and company as levels, the variance calculations is as follows.

$$\rho_{country} = \frac{\sigma_u^2}{\sigma_u^2 + \sigma_e^2} \quad (2.10)$$

In our model (2.3), there are three levels. If we calculate the ICC of the third level, the country level, it could be calculated as the equation below using the method by Davis and Scott (1995) (Hox, 2002).

$$\rho_{country} = \frac{\sigma_v^2}{\sigma_v^2 + \sigma_u^2 + \sigma_e^2} \quad (2.11)$$

The same goes for the sector level.

$$\rho_{sector} = \frac{\sigma_u^2}{\sigma_v^2 + \sigma_u^2 + \sigma_e^2} \quad (2.12)$$

In the method used by Siddique et al. (1996) the country level ICC is calculated in the same manner. However, sector level ICC is calculated as below.

$$\rho_{sector} = \frac{\sigma_v^2 + \sigma_u^2}{\sigma_v^2 + \sigma_u^2 + \sigma_e^2} \quad (2.13)$$

Hox (2002) notes that both methods provide unbiased estimates. However, the first should be used if the interest lies in the decomposition of the variance across levels, or to see how much variance is explained at each level, and the latter should be used to estimate the expected correlation between two randomly chosen variables (Hox, 2002: 32). Since the interest in this study is more the former than latter, the first method is used (more in chapter 4).

Another aspect of interest in our study is to examine how much variance is explained by the predictor variables, both company and country. For this, Hox (2002) suggests a simple calculation method which entails comparing the variance found in the baseline model, the initial model in which we are comparing against, with the comparison model. Thus explained variances for the level 1, the company level, and level 2, the country level, are as follows (Bryk and Raudenbush, 1992: 68; Hox, 2002: 64).

$$R_1^2 = \left(\frac{\sigma_{elb}^2 - \sigma_{elm}^2}{\sigma_{elb}^2} \right) \quad (2.14)$$

$$R_2^2 = \left(\frac{\sigma_{u0b}^2 - \sigma_{u0m}^2}{\sigma_{u0b}^2} \right) \quad (2.15)$$

σ_{elb}^2 is the company level residual for the baseline model, and σ_{elm}^2 is the company level residual for the comparison model. Respectively, σ_{u0b}^2 is the country level residual for the baseline model, and σ_{u0m}^2 is the country level residual for the comparison model. As we can see the proportion of variance explained is separated into the different levels that exist in the analysis. In addition, for random slopes models, the explained variance observed separately for the variance of the random slope is given in equation (2.16).

$$R_{\beta_1}^2 = \left(\frac{\sigma_{u1b}^2 - \sigma_{u1m}^2}{\sigma_{u1b}^2} \right) \quad (2.16)$$

It has been noted that these equations, although straightforward, have two problems (Hox, 2002). Firstly, they can arrive at negative explained variance (Hox, 2002; for a detailed explanation on why this would be the case see Snijders and Bosker, 1994). Secondly, in the random slopes model, the estimated variance depends on the scale of the explanatory variables that have the varying slope (see Hox, 2002:66-67, for more detail on why this could be the case). An alternative method suggested by Snijders and Boskers (1994) is to use the following equation (2.17) for level 1 variance calculations to substitute σ_e^2 with $\sigma_e^2 + \sigma_u^2$ to use all of the information about the within group variance in a consistent way.

$$R_1^2 = \left(\frac{(\sigma_{elb}^2 + \sigma_{u0|b}^2) - (\sigma_{elm}^2 + \sigma_{u0|m}^2)}{\sigma_{elb}^2 + \sigma_{u0|b}^2} \right) \quad (2.17)$$

However, this method is not useful when the key focus is to examine the change variance of each level by the addition of new predictor variables into the model, both in level 1 and level 2. For this reason, we choose the variance equation model shown in (2.14). However, when calculating the explained variance we always examine the changes in both levels simultaneously to see where the changes were made.

For level 2 variance Snijders and Boskers (1994) substitute σ_{uo}^2 with $\sigma_{uo}^2 + \frac{\sigma_e^2}{n}$, n representing the group sizes. In case of unequal group sizes, n should be replaced by the average group size or the harmonic group mean defined by $\left\{ (1/N) \sum_j \left(\frac{1}{n_j} \right) \right\}^{-1}$.

The revised model can be one as represented in (2.18).

$$R_2^2 = \left(\frac{\left(\sigma_{uo|b}^2 + \frac{\sigma_{elb}^2}{n} \right) - \left(\sigma_{uo|m}^2 + \frac{\sigma_{elm}^2}{n} \right)}{\sigma_{uo|b}^2 + \frac{\sigma_{elb}^2}{n}} \right) \quad (2.18)$$

Although the latter two methods of variance calculations would be more precise manner to calculate the variance, the two methods will not result in big differences. The reason is that since the n in this survey is so large, approximately 1000, and since the variance is less than this number, that the additional term $\frac{\sigma_e^2}{n}$ of the equation would be less than 1. Thus, the choice of method used would not make a large difference in the results, so in the latter chapters for matters of simplicity and coherence we choose the model given in (2.15) for the calculation of level 1 variance.

4.4. MLWin

The software package used to run the multilevel models in this study is MLWin version 2.10. MLWin is one of the most widely used multilevel analysis software packages, and is convenient to use because of its intuitive user interface as well as the quick speed in which the data analysis is done. For more about MLWin, see Rasbash et al. (2009).

Chapter III. Working time components of European companies: Deriving the dependent variable

1. Introduction

The first question addressed in this study is the possibility to derive components of working time flexibility. Although there has been an abundance of studies in the area of working time flexibility, they have been restricted to the examination of one arrangement, usually the use of part-time work (O'Reilly and Fagan, 1998, Anxo et al., 2007), the actual hours worked (for example O'Reilly et al., 2000; Messenger, 2004), or employees' working time preferences (Stier and Lewin-Epstein, 2003; Bielenski et al., 2005). Despite this abundance, there are not many studies that examine empirically whether and how working time arrangements occur simultaneously within companies. Examining the use of working time arrangements in a holistic manner is important, since only then one can see what is actually happening on the shop floors, and what individuals are exposed to with regard to flexibility. Although many studies have developed assumptions about the bundling of a wide variety of working time arrangements, there is an absence of empirical underpinnings using large numbers of cases across countries. This is most likely due to the lack of appropriate data sources, i.e. there were no data covering the wide range of issues on working time flexibility and collected at establishment-level. In addition, there was an absence of a method in which the arrangements can be examined simultaneously.

The chapter explores the possibility of examining working time flexibility arrangements not as separate entities but as bundles (See chapter 1 section 4), to arrive at the dependent variable that will be used in the rest of the chapters of this study. This is done by proposing a new method in which to examine working time practices. The chapter firstly focuses on the question, whether working time flexibility arrangements can indeed be grouped as bundles. Secondly, if arrangements can be bundled, what types of bundles can be identified? Thus, what are the main latent factors (characteristics) underlying the groupings of working time flexibility

arrangements? Lastly, have the factors derived a dichotomous relationship, or could they be placed on a linear continuum? The theoretical basis of the analysis is the flexible firm approach, because it is useful to take a holistic view of companies' practices and thus the combinations of flexible practices. Examining single arrangements separately will not reveal the real practices of companies and what employees are exposed to with regard to working time flexibility.

The chapter is structured as follows. In the next section, we examine the reasoning behind bundling arrangements, and some theories of working time flexibility categories to derive our hypothesis. In the third section, we examine the method used for the analysis, namely factor analysis, and the variables that are available in the Establishment Survey on Working Time (ESWT). Here we elaborate on the reasoning behind the choices made concerning the variables included and excluded in our analysis. In the fourth section, the outcomes of the factor analysis along with the robustness testing across countries and sectors are provided. In section five, we derive the dependent variable for this study based on the analysis and examine some preliminary country variance of these scores, to arrive at country clusters. With this, we examine the country averages for the component scores. Lastly, in section six we draw conclusions.

2. Working time categories or strategies

2.1. Company flexibility strategies and components

Although there have been studies on companies' use of flexibility and more specifically, working time arrangements, not many studies examine the combination of various arrangements. However, it is crucial to examine flexibility arrangements in a holistic view for a better understanding of flexibility practices of companies and what individuals face on the shop floors. Firstly, examining the use of flexible arrangements separately neglects how organisations may use various combinations of arrangements in combination (Kalleberg et al, 2003: 539). The use of an arrangement within the company will have different implications depending on what other

arrangements have been used simultaneously, since there are substitution as well as complementary effects between the arrangements. In addition, sometimes managers find it difficult to distinguish the various arrangements organisations use, and the use of bundles captures the basic distinction between types of flexible arrangement (Kalleberg et al 2003: 539~540). Lastly, use of the concept of bundles or components allows a more simple analysis of complex ideas, since we are able to grasp the use of various arrangements in manageable small number of concepts. To gain a complete picture of flexibility behaviour of the firm and a deeper understanding of how and why establishments use them, yet in a manageable manner, it is a good idea to use the concept of flexibility strategies or components.

Many studies, especially in the area of Human Resource Management (HRM), aim to identify categories of labour market flexibility strategies. The most widely-used distinction differentiates between strategies depending on where the flexibility exists, internal or external to the firm, and how it is developed, functionally, numerically or financially (Atkinson and Meager, 1986). Several other categorisations have been developed (Kalleberg, 2001), such as internal versus external flexibility (Cappelli and Neumark, 2004), clan versus market (Ouchi, 1980), dynamic versus static flexibility (Colclough and Tolbert, 1992; Deyo, 1997) and organisation-focused versus job-focused employment relations (Tsui et al., 1995). These classifications share similarities either in the way the arrangements are used or on the strategy in which they serve. They are mostly based on the common characteristics of the arrangements and not on empirical investigations of their common occurrence in firms, thus the flexibility bundles reveal a theoretical rather than an empirical focus.

2.2. Flexible working time typologies

Not many studies are at hand concerning typologies of working-time arrangements. Of the existing, the most common typology of working time flexibility distinguishes employer- from employee-preferred flexibility arrangements, though the terminology varies greatly. Worker-centred flexibility versus company-centred flexibility (Gareis and Korte, 2002), active versus passive flexibility (Wilthagen,

1998; Visser, 2003), employer-oriented versus employee-oriented arrangements (Reilly, 2001; Rubery and Grimshaw, 2003), and unstructured, structured and autonomous flexibility (Fagan, 2004) are working time flexibility categories developed over the years.

Despite the differences in their wording, most typologies distinguish between flexibility serving employees' needs and those which are for employers' needs. Gareis and Korte (2002: 1104), for example, define worker-centred flexibility as involving "more freedom to choose working times attuned to personal preferences and family requirements". On the other hand, company-centred flexibility "brings supply of human capital in line with the temporal requirements following from business, e.g. times of customer demand, machine running times, optimal utilisation of capital invested" (Gareis and Korte, 2002: 1104). Similarly, Wilthagen (1998) and Visser (2003) put forward the notion of active versus passive flexibility based on the voluntariness of take up. When the employer imposes flexibility on the worker, it is considered passive. If workers voluntarily take up an arrangement based on their preferred working conditions, this is considered active.

Fagan (2004) expands this distinction even further by including the predictability dimension. Using the notion of structured and unstructured flexibility as developed by Purcell et al. (1999), she distinguishes three types of working time flexibility strategies. Unstructured flexibility is when employees have little control over the schedule and the volume of hours that they work, similar to employer-oriented flexibility. Autonomous flexibility is geared towards employees' needs rather than organizational requirements and gives employees some ability to vary or alter their working time in order to accommodate other activities, similar to employee-oriented flexibility. The third category is structured flexibility. Here, the working time arrangements are non-standard, but predictable, offering employees more control over their working hours than unstructured flexibility, and potentially providing an alternative for people who cannot work standard hours (Fagan, 2004: 111). This distinction could be considered a type of flexibility that facilitates the needs of both employers and employees.

The part-time versus full-time oriented working time arrangements typology is the only competing theory against the predominant employer versus employee-oriented dimensions. Rubery and Grimshaw (2003) consider this as an additional dimension, thus putting forward a two dimensional approach of working time, notably the employer versus employee-typology and the part-time versus full-time typology.

Regarding the typologies of working-time flexibility, two schools of thoughts can be distinguished. Visser (2003) and Rubery and Grimshaw (2003) understand the employee-oriented and employer-oriented working time arrangements as a linear continuum. The more employee-centred the arrangement is, the less employer-centred it is. In contrast, Fagan (2004) and Gareis and Korte (2002), present the typologies rather as dichotomous. Here, the degree to which the flexibility arrangements facilitate the needs of either the employee or the employer is not necessarily at odds with each other.

Most of the above mentioned studies have based their arguments on a theoretical basis or on small number of empirical case studies from one or a few countries. Our understanding of working time flexibility and its dimensions could benefit considerably from a broader empirical underpinning. For two reasons, establishment-level data will contribute more to this underpinning compared to individual-level data. First, establishment-level data provides a better view on employer-needs than individual-level data ever can. Second, data quality is low when individuals are asked to report about their employer's policies, as individuals are likely to report the policies that affect themselves only.

2.3. Hypothesizing the dimensions of working time flexibility

From the literature examined in the previous section, we derived three approaches to working time flexibility. In the first, two continuums can be assumed to position all flexible working time arrangements, notably the full-time/part-time divide and the emphasis on employer or employee-centred interests, as is shown in figure 3-1. This pertains most to the distinction made by Rubery and Grimshaw (2003). Secondly,

working time flexibility consists of one employer- versus employee-oriented continuum, without the full-time/part-time dimension, which pertains close to that of Visser (2003). Thirdly, working time flexibility consists of employer- versus employee-oriented dimensions, but the two serve as separate dimensions which are not at odds with each other (see Table 3-1), thus not placed on a linear continuum, unlike the second type. The works of Fagan (2004) and Gareis and Korte (2002) seem to support this idea.

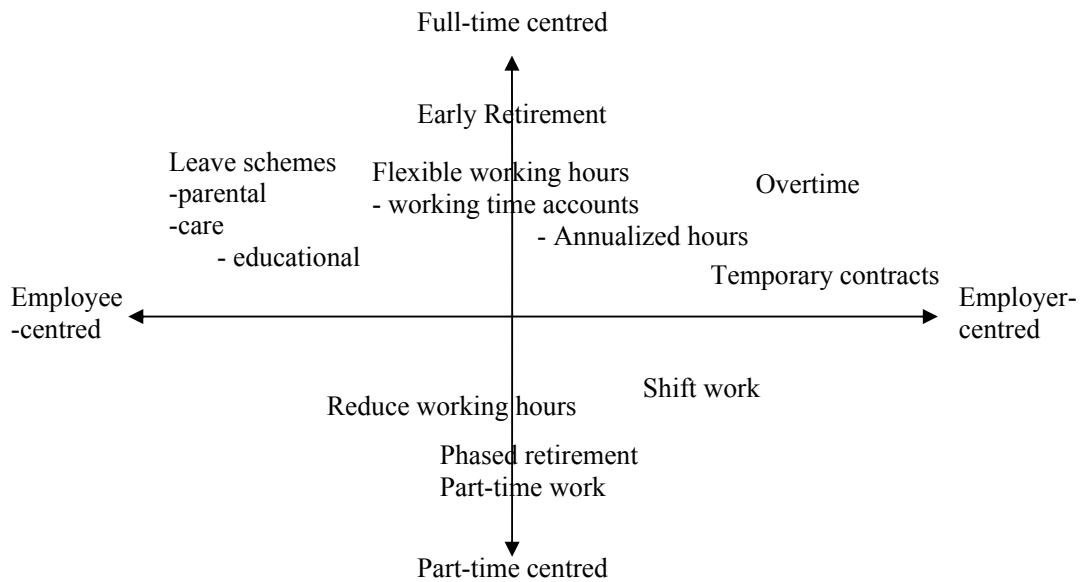


Figure 3-1. Taxonomy of flexibility arrangements

Source: Based on Rubery and Grimshaw (2003), Visser (2003) adapted by authors

Concerning the first approach, figure 3-1 graphically depicts the full-time/part-time and the employer/employee divide, whereby part-time work, phased retirement, and the right to reduce working hours are part-time related arrangements, whereas early retirement and flexible working hours are more likely to be full-time related arrangements. However, all of these arrangements can potentially serve the interests of both employees and employers, meeting the needs of both sides. Additionally, working time accounts can be seen as being more employee-centred, whereas annualisation of working hours is likely to be more geared towards the employer.

Despite having similar characteristics, working time accounts have been developed to facilitate workers balancing work and life, whereas annualisation of working hours is used to allow employers to change employees' daily/weekly working hours to adapt to workload cycles without having to pay overtime premiums.

Leave schemes are employee-centred flexibility arrangements which are also mostly full-time oriented. Although leave schemes can be used by part-time workers, they are used more often as alternatives to reduction of working hours for adapting work to various life needs such as child-minding duties. Overtime, temporary contracts and unusual hours are more employer-centred options. Of these, overtime is used more in the full-time centred model, whereas unusual hours and temporary contracts can be used by both full-time and part-time models. Shift work is more employer-centred and oriented more towards the part-time centred flexibility model. Both dimensions form a linear continuum.

The second approach assumes that the part-time versus full-time oriented dimension is not a relevant dimension. This could also be depicted as Figure 3-1, however, when the dimension of part-time, full-time is excluded from the picture.

Unlike the second approach, the third approach assumes that the employee- and employer-centred characteristics of working time arrangements are not a linear continuum as shown in Figure 3-1, but basically form two different dichotomous dimensions. The works by Fagan (2004), and Gareis and Korte (2002) seem to support this idea.

Table 3-1 depicts a dichotomous dimension classification of flexibility arrangements used within companies. The dimensions are, firstly, whether or not the working time arrangement facilitates the needs of employees, and secondly, whether or not it facilitates the needs of employers. Table 3-1 shows that, based on these two dimensions, three categories of working time flexibility can be distinguished. The first category is the working time flexibility arrangements for employees, which includes various leave schemes such as parental leave, long-term leave for care, education and leave for other reasons. The second category is the working time flexibility arrangements for employers, including shift work, night shifts, weekend shifts, and

overtime. Lastly, there are working time flexibility arrangements that facilitate both sides, such as part-time work, flexible working schedules, phased retirement and early retirement. The third approach assumes that the strategies to promote flexibility for employees and employers are not necessarily at odds with each other, because for some arrangements both ends of the flexibility continuum can be met in a positive sum manner.

Table 3-1: Classification of working time flexibility arrangements

		Flexibility options for employees	
		Yes	No
Flexibility options for employers	Yes	<ul style="list-style-type: none"> - Part-time work - Flexible working time / schedule - Phased retirement - Early retirement 	<ul style="list-style-type: none"> - Unusual working hours(night shift, weekend shifts) - Overtime
	No	<ul style="list-style-type: none"> - Parental leave - Long-term leave for care, education, others 	-

Source: Chung et al., 2007

The aim of this chapter is to empirically test this theoretical framework about the grouping of arrangements along employee- versus employer-centred factors, to provide a basis for examining working time flexibility arrangements as bundles and not as single entities. To achieve this goal, the first question asked is whether working time arrangements of European companies can be bundled. The second is whether these bundles can be recognized as dimensions of employee- or employer-centred interests. The third question relates to whether these dimensions are placed along a linear continuum or whether they can be considered separate dichotomous dimensions. Therefore, our hypotheses are as follows.

Hypothesis 1-1: Working time flexibility arrangements can be bundled into components.

Hypothesis 1-2: The grouping of arrangements is based on whose needs they facilitate, thus those for employers versus those for employees.

Hypothesis 1-3: The components of flexibility are not points of a linear continuum but rather dichotomous.

3. Factor analysis and selection of variables

3.1. Factor analysis

To investigate the empirical underpinning of the employee- versus employer-centred working time flexibility, exploratory factor analysis is the most suitable method. Factor analysis reduces the numbers of variables by combining them into a single factor and allows for the identification of interrelated variables, and thus for finding or classifying clusters (Statsoft, 2008). The grouping of arrangements found will be based on their covariation, thus how they are being used together, which in turn is indicating that they share a similar latent characteristic (for more on factor analysis see chapter 2.). Thus the groupings can be understood as representing working time bundles, that is, the bundles of similar working time arrangements. However, they can also be understood as representing the company's working time strategy. Following the literature and the stylized presentation in Figure 3-1 and Table 3-1, this study hypothesizes that the arrangements are expected to group into two latent factors, the employer-centred and the employee-centred arrangements.

There can be several approaches to factor analysis with multi-country data. If our interest was to find country or sector specific theories, we could run the analysis for each country and each sector. However, the key point of our analysis is to find a pan-European result, and not necessarily one for a specific country. If we were to find country specific components, we will not be able to use this outcome to compare across Europe. The same logic goes for sectors. Thus we include all countries and all sectors into the analysis to derive our general working time component. This approach presumes, to a certain degree, that the pan-European, pan-sector result found is applicable for all European countries and sectors. However, this is not necessarily

true. Thus in section 4.2, we will examine the issues concerning the differences in the components found when analysing each country and sector separately.

The results of the factor analysis and the groupings of arrangements depend heavily on the indicators chosen; as the outcomes rely on the number of indicators (variables) included representing a certain idea or type. The exclusion of relevant variables and the inclusion of irrelevant variables in factor analysis will affect, often substantially, the factors which are uncovered (Kim and Mueller, 1978; Garson, 2008). Hence, the initial choice of indicators used for the analysis is crucial. In the choice of variables, it is important that relevant variables are included in the analysis, but it is equally important that there are no arbitrary emphasises on certain types of variables or specific ideas. In other words, we should not include large numbers of variables that could represent a certain latent characteristics without solid grounds on which to do so. Since our two competing hypotheses for working time components is part-time and full-time components versus employee-oriented and employer-oriented components, we try to put an equal share of variables that represent these ideal types in the analysis.

3.2. Selection of variables

If we were to include all information given in the ESWT data set in the analysis to derive components of flexibility and work-life balance, due to the character of factor analysis, it would result in an arbitrary clustering without any theoretical basis. The results found in such manner would be misleading and unhelpful. For this reason, we need to be selective in the variables to be included or excluded in the analysis. In this section, we elaborate on the reasons behind the choice of variables included in the analyses of this study. Table 3-2 depicts the range of variables that are covered in the ESWT survey.

Table 3-2. Flexibility arrangements and work-life balance issues covered in the ESWT survey

Main Category	Subcategories	Information ^a	Proportion ^b	Note
Part-time work	Part-time workers	Use	√	The possibility of full-time employees to go to a part-time contract ^c
	Right to work part-time	Available		
Unusual hours	Overall	Use		Work between 10pm and 6am. Regularly changing working hours due to the nature of the job
	Work at night	Use	√	
	Work on Saturday	Use	√	
	Work on Sunday	Use	√	
	Shift work	Use	√	
Flexible working hours	Overall	Use	√	Worker has possibility to adapt starting, ending time of work Possibility to accumulate hours for full days off
	Working time accounts	Use		
Overtime	-	Use	√	Paid or unpaid
Parental leave	-	Use		Whether an employee has used it in the past three years
Long-term leave	Leave for care or illness in family	Availability		Paid or un-paid
	Leave for education	Availability		
	Leave for other purposes	Availability		
Retirement schemes	Early retirement	Availability		only asked to companies with 50+ workers / possibility to reduce their weekly working hours before retirement
	Phased retirement	Availability		
Temporary contracts	Fix-term contracts	Use		
	Temporary agency workers	Use		
	Freelance workers	Use		
Work-life balance facilities	Kindergarten or crèche	Availability		
	Professional help for childcare	Availability		
	Professional help for household management	Availability		
	Others	Availability		

a: Use questions were asked whether the company has used or is using the arrangement, availability questions were asked whether the company has made such arrangements available for its workers.

b: √ indicates that there is information on the proportion of workers in such arrangements

c: This is measured as “can get appropriate job quickly” “has to wait for some time” as there being a possibility, and “possible only exceptionally” “no chance” as there not being a possibility. This question was asked divided into skilled workers and unskilled workers and here the average score for both groups is used.

The first column of Table 3-2 depicts the main categories of flexibility and work-life balance schemes included in the survey. The main categories are part-time work, unusual hours, flexible working hours, overtime, long leaves, retirement schemes, temporary contracts, and work-life balance facilities. These nine categories are broken down into 23 subcategories shown in the second column. The third column indicates the way the questions were asked. If the survey question asked whether the company used the arrangement, we consider this a *use* question, if the question asked whether the company made the arrangement available to their workers, we consider this an *available* question. The fourth column represents whether or not the information on the proportion of workers using the arrangement was asked in the survey. In the last column one can see the specific details in the way questions were asked, for those arrangements this is not clear cut.

Of these arrangements, we chose the relevant arrangements for our analysis. The reasoning is as follows.

Focus on working time flexibility

Firstly, we exclude the variables that do not concern working time flexibility issues, for a better focus. For this reason we exclude work-life balance facilities and the use of external numerical flexibility from our analysis.

The items concerning work-life balance facilities, that is, various services and physical facilities provided to help workers adapt work with other responsibilities, included in the survey were the use of kindergarten or crèche, professional help for childcare, professional help for household management, and other services. Although these services can be used in the study to examine the work-life balance options provided in the company (see Chung, 2008 for a detailed analysis on this topic), or to examine the overall HR management strategies of the company (see Chung et al., 2007 for an example of this), they are not in themselves working time issues. The information concerning the use of work-life balance facilities will be used in the later chapters as an independent variable to see whether companies use the different types of working time arrangements, depending on whether they also provide various work-life balance services (see chapter 4).

We also exclude external numerical flexibility arrangements, that is, the use of various temporary contracts and early retirement, from our analysis to keep the focus on working time flexibility. We can include various temporary contract types into our analysis to test the relationships between the use of working time options and temporary contracts, i.e. the relationship between the use of internal numerical and external numerical flexibility options. However, there are several limitations to this. Firstly, currently the indicators covered in the survey data are not exhaustive of all types of temporary contracts, and various contract types such as on-call work, contract workers etc. are not included. In addition, to truly examine external flexibility, one must have the data for the turnover of the company. In other words, in many countries open-ended contracts are temporary by the manner in which the contract is used. For example, in countries such as the UK, workers are not granted employment protection rights in their first year of contract. As a result the percentage of workers with tenure of one year or less is actually higher than that of Spain, which has about 10 times as many workers on legally temporary contracts (Chung, 2005). Early retirement which is also an external numerical flexibility option, is also excluded from the analysis. The information on the external numerical flexibility will be added into the later analyses as an independent variable (see chapter 4).

Working time flexibility for workers

For the arrangements which are more geared towards employees' work-life balance needs, we use the availability information on the three sub-categories of long leave scheme, and exclude the information gathered on parental leave.

Parental leave is excluded from the analysis because of the manner in which it is asked in the survey. The question used in the ESWT survey is whether or not "there are/were workers taking up parental leave in the past three years". As mentioned in chapter 1, for arrangements that are used to enhance worker's work-life balance, the availability of the options should be asked. This is because ultimately it is the workers themselves that decide whether or not to take the arrangements up. In addition, since parental leave is legally available in all countries surveyed (See Anxo et al, 2007b), as well as being installed as a European Directive (Council Directive [96/34/EC](#) of 3 June 1996) the relevant question in the survey would have been whether or not there are

additional parental leaves given by the company, in addition to the national (legal) provisions. This was not done in this survey, thus, the information for parental leave is excluded from our analysis.

In addition, we use the sub-division variables of the three types of long leaves, that is, for care or illness in the family, for education, and for other purposes. The reason for this is threefold. Firstly, it is due to the fact that our competing hypothesis is that working time arrangements can be categorised as part-time oriented versus full-time oriented arrangements. Thus the arrangements representing two types of working time strategies, that is, one being focusing on full-time work, taking leaves or days off to adjust work to life, and the other being adjusting working hours for work-life balance through part-time work (Rubery and Grimshaw, 2003), should be included proportionately. In this perspective, leave schemes are one stream of their own, especially used in countries where full-time work is the norm even for women, such as it is the case for Nordic countries. Secondly, only when we divide the leave schemes to three sub categories, will there be an equal proportion of arrangements representing employee-oriented arrangements and employer-oriented arrangements. As we can see later on, there are three arrangements which are more geared towards the employer, that is overtime, shift work, unusual hours. Thus, to give each concepts equal weighting, there should be three arrangements that can be categorised as arrangements that are geared towards employees. On the other hand, if we consider the use of leave schemes as just one arrangement, this will entail that there would be too much emphasis on employer's flexibility arrangements in the analysis, which would disrupt the outcomes. Lastly, we believe that the leave schemes used here are of significantly different character. Leave for care and education are of very different character, used for different purposes. Both are also of great importance especially in recent times, where there is an emphasis on enabling workers to balance work and family responsibility, and also to encourage life-long learning and continuous training (CEC, 2007a).

Working time flexibility options for employers

From the survey we use variables on the use of unusual hours, shift work, and overtime to represent the working time flexibility arrangements for employers.

Although unusual hours can have three different sub-categories, that is work at night, work at Saturday, and work on Sunday, we use the larger category of the use of unusual hours in general in our analysis. If we use all of the three sub-categories of unusual hours into the analysis, this would put too much emphasis on unusual hours, making the use of unusual hours drive the results of the analysis. On the other hand, we include shift work as a separate working time arrangement in the analysis. Although in the ESWT survey structure shift work is a nested arrangement within unusual hours, and companies that use unusual hours also have high chance of using shift work, by definition these arrangements are not necessarily the same. In the survey, shift work is defined by jobs that are of changing hours due to the nature of the job. This does not necessarily involve the shift being outside the normal working hours. Due to this, companies can use either one of these arrangements without using the other. For this reason, both unusual hours and shift work are included in the analysis.

Also, as a working time flexibility arrangement geared towards employers, overtime is included. Here, overtime includes both paid and unpaid overtime. In addition, this includes regular overtime as well as overtime due to unusual or unforeseeable workloads.

Working time flexibility options for both

Lastly, there are working time flexibility arrangements that can be for both employers and employees. These include part-time work, right to reduce working hours (or right to change to part-time work), flexible working hours and phased retirement.

In the survey, the right to reduce working hours is measured through the possibility for full-time workers to change to part-time in a relatively easy manner. The use of part-time work will be closely linked with the right to reduce working hours, and they are expected to have high loadings in the same factor. In the Netherlands, for example, the right to reduce working hours in collective agreements has been the main driver of the relatively high proportion of workers in part-time jobs (Tijdens, 2005). However, we include both the use of part-time work and the right to reduce working hours separately, mostly because in companies where part-time and

full-time jobs are highly segmented, the use of part-time jobs may not go along with the right to reduce working hours. In addition, the right to reduce working hours is an increasingly important arrangement that is provided to facilitate worker's work-life balance⁸ which should be examined separately.

Phased retirement is similar to part-time work and the right to reduce working hours. By definition, since phased retirement is the reduction of working hours before going into full retirement, this would be the same as the reduction of working hours/possibility to work part-time. However, since reduction of working hours is an arrangement primarily taken up by women for child-rearing (Tijdens, 2002), and phased retirement is aimed at older workers, these two arrangements are considered to be different sets of policies. In the ESWT data, approximately half of the companies that provide the right to part-time work do not offer phased retirement, and approximately one third of the companies that provide phased retirement do not offer the right to part-time work. Thus it seems feasible to include phased retirement separately in our analysis. However, there are some limitations to the phased retirement data. The question was asked only to establishments with workers over 50 years of age. Although there is only a very small amount of companies where there were no older workers (approximately 8 percent of all companies), however this is larger for smaller companies⁹ and for companies with more than 100 workers the percentage is about 1 percent. In the analysis, the companies without older workers have been treated as offering no phased retirement.

The last arrangement included in the analysis is flexible working hours. Flexible working hours is defined as the possibility for workers to adapt the start and ending time of work according to their preferences. In the survey, the possibility to accumulate hours, i.e., the use of working time accounts, has also been asked, but only to companies using flexible working hours. Therefore, including working time accounts on top of flexible working hours would be putting extra emphasis on flexible

⁸ In 2000, the Netherlands introduced in their working time legislation a right to decrease working hours (Wet Aanpassing Arbeidsduur: WAA), and in 2005, in the UK this right was introduced for parents with children under the age of 6 in the Work and Families Bill and is planned to be extended to those with children under the age of 16 by April 2009 (EIROonline, 2005a; Telegraph 26th August, 2008).

⁹ 19% for companies with 10 to 19 workers, 9% for 20 to 49 workers, 4% for 50 to 99.

working hours and could be considered as double counting. For this reason, we do not include working time accounts in our analysis.

Conclusively, Table 3-3 shows the included arrangements in the study. The two columns on the right represent whether or not the arrangements are considered to facilitate the needs of employer and/or employees based on previous studies and theory.

Table 3-3. Arrangement included in the analysis

Arrangements used	Employee oriented	Employer-oriented
Overtime		√
Unusual hours		√
Shift work		√
Part-time work	√	√
Right to reduce working hours	√	√
Flexible working hours	√	√
Phased retirement	√	√
Leave for care or illness in family	√	
Leave for education	√	
Leave for other purposes	√	

4. Analysis outcomes

4.1. Factor analysis outcome

In this section we examine the outcomes of our factor analyses. Here we use establishment-weights for the analysis, which gives the proportional weight so each sector and each company size is represented according to reality. Firstly, we test to see whether the factors derived were correlated or were of orthogonal relationship, through the use of the promax solution. Promax solution is the most frequently used method for non-orthogonal rotations, especially for larger data sets (Garson, 2008; for more on the rotation methods see chapter 2). Running the promax solution, we found that there were no strong correlations between the factors, notably at most 0.3 for three factor solution and 0.2 for two factor solution. We consider this correlation too

small to break the orthogonal assumption of the factor analysis. For this reason we chose a varimax solution, the most commonly used orthogonal method, which presumes a non-correlation between the two factors derived. In the varimax rotation solutions, factors tend to have either large or small loadings on any particular variable, making it easier to identify each variable with a single factor (Garson, 2008). Selecting the number of factors based on the Kaiser-criterion, the first outcome shows three factors derived from 10 arrangements.

Table 3-4. Three factor varimax rotation factor analysis outcome

Variable	Factor1	Factor2	Factor3	Communalities
Care leave	0.82	0.11	0.01	0.68
Education leave	0.83	0.07	0.05	0.69
Other leave	0.70	0.05	0.01	0.49
Overtime	- 0.01	0.22	0.36	0.18
Unusual hours	- 0.01	0.05	0.80	0.65
Shift work	0.07	0.02	0.79	0.63
Phased retirement	0.07	0.41	- 0.02	0.17
Flexible working hours	0.01	0.72	0.07	0.53
Part-time work	0.23	0.60	0.02	0.41
Reduce working hours	0.14	0.72	0.05	0.54

Explained variance: 49.8%

Establishment weighted. Highest loadings in bold.

The first factor shows high factor loadings for all of the long leave arrangements (Table 3-4). Since these leave schemes are the arrangements that have been seen to accommodate the needs of the worker the most, this factor could be interpreted as the *working time flexibility for employees* factor. The second factor includes the four arrangements that have been noted in the hypothesis as being working time arrangements that can facilitate both employers’ and employees’ needs, that is, phased retirement, part-time work, flexible working time arrangements, and the right to reduce working hours. Thus we name this factor as the *working time flexibility for both employers and employees* factor. The third factor can be named *working time flexibility for employers* factor, with overtime, unusual hours, and shift work showing high factor loadings. The naming of the factors is according not only to how the

arrangements grouped into three separate factors depending on their highest loading scores, but from their loadings on other factors as well. We can see that the arrangements have almost no loading or very slight negative loading on the other factors, other than their main factor. The exception to this is part-time work, where there is a slight positive loading on factor 1 and overtime with a slight positive loading on factor 2.

Table 3-5. Two factors varimax rotation factor analysis outcome

Variable	Factor1	Factor2	Communalities
Care leave	0.79	0.00	0.63
Education leave	0.78	0.01	0.61
Other leave	0.66	- 0.02	0.44
Overtime	0.01	0.42	0.18
Unusual hours	- 0.13	0.66	0.45
Shift work	- 0.06	0.63	0.39
Phased retirement	0.42	0.36	0.31
Flexible working hours	0.20	0.24	0.10
Part-time work	0.25	0.50	0.31
Reduce working hours	0.37	0.47	0.36

Explained variance: 37.7%

Establishment weighted. Highest loadings in bold.

Although the data results in three factors, in our hypothesis, based on previous studies and theory on working time flexibility components (WTFC), we theorized two components of working time flexibility. The two factor solution is shown in Table 3-5. The two factor solution groups in the first factor, the arrangements that benefit the employees, the *working time component for employees*, and in the second factor, those that benefit employers, the *working time components for employers*. They cannot be seen as confirming the competing hypothesis of the division of full-time oriented versus part-time oriented working time options. The arrangements that were once in the second factor in Table 3-4, the working time flexibility for both, load on both factors relatively similarly. The exception to this is part-time work, where the loading score on the second factor is higher. This may be due to the fact that in comparison to other arrangements, part-time work is still a method employers use to adapt to their workload fluctuations. The high loading of the right to reduce working

hours in the second factor may have to do with its close relationship to part-time work.

The last column of the Table 3-4 and 3-5 shows the communality scores for each variable. Communalities represent the extent to which the factors explain each variable. The high communality scores mean that the variable is better explained by the factors derived (R-square). As we can see, in the three factor solution in Table 3-4, overtime and phased retirement is not explained much by the three factors derived in the analysis, having communalities of 0.18 and 0.17 respectively. In the two factor solution in Table 3-5, communalities of phased retirement is raised to 0.31 but the use of overtime and flexible working schemes is not explained much by the two factors derived in this analysis, showing communalities of only 0.18 and 0.10. Usually, having low communalities would mean that the variable is not doing much to explain the factor, and that there is not much relationship between the variables. However, despite the low communalities the loadings seem to be statistically significant. In addition, Garson notes how even if a variable has a small communality coefficient, if it plays a significant role in defining the factor, it is meaningful to include the variable (Garson, 2009). We believe that these variables do indeed play important roles in theoretically defining the factors derived. Thus we conclude with the factor solution arrived from our analysis.

Based on the results shown in Table 3-4 and Table 3-5, we can say that we have confirmed our first and second hypotheses. Working time arrangements can be grouped into bundles (hypothesis 1-1), and the most prominent latent characteristic that groups the bundles is whose needs the arrangements facilitate, thus if it is for employers or if it is for employees (hypothesis 2-2). One thing that is not certain is if there are three factors, rather than two, and if an extra component can be found, which groups arrangements that can facilitate the need of both employers and employees. Here we choose the two factor solution over the three factor solution for several reasons. Firstly, in most of the previous studies dealing with working time flexibility, it was theorized that there are two main components of working time, which lead us to hypothesize that there are indeed two components of flexibility. Secondly, the two factor solution allows for a clearer distinction between the most important division of

working time flexibility, which is the employer and employee needs for flexibility. In the three factor solution, it is still quite unclear what the third component, flexibility for both which is the second factor in the analysis in Table 3-4, will explain, and what significance it may have. We can consider the flexibility for both component to group the arrangements that can potentially be used for the benefit of both employers and employees, rather than one or the other. However, in this case, this benefit can also be taken into account by the increase in the scores for the other two components. In other words, when a company use arrangements that can facilitate both employers and employees, this can be represented as a simultaneous increase of the employer-component and employee-component scores. In this regard, this third category can be redundant. The only relevant reason for distinguishing the flexibility for both component, would be to see the difference outcomes they may have concerning performance outcomes (more on performance outcomes in Chapter 6). However, preliminary analyses have shown us that this is not necessarily the case. Lastly, the two components approach makes not only our concepts simpler but our analysis simpler, from the pure fact that there are less concepts to test, and that they are less tricky to define. In other words, it seems not only theoretically but also empirically plausible and sensible to stick to the two factor solution for the rest of this study.

One last hypothesis to confirm in this chapter is whether or not the components found in the analyses are either ends of a linear continuum or if they are two different dimensions of flexibility (hypothesis 1-3). If there were to be in a linear continuum, the factor analysis should result with a one factor solution. In this result, if high negative loadings would signify the employer-friendliness of the arrangement, then high positive loadings would signify the employee-friendliness of the arrangement, or the other way around. However, we can clearly see that this is not the case, as we end up with two or three factors in our analysis outcome. The fact that the two factors found in the result in Table 3-5, are not highly negatively correlated to each other is strong evidence that the two components are not necessarily within a

linear line which is at odds, but rather a two-dimensional relationship.¹⁰ Figure 3-2 is a graphical representation of this relationship.

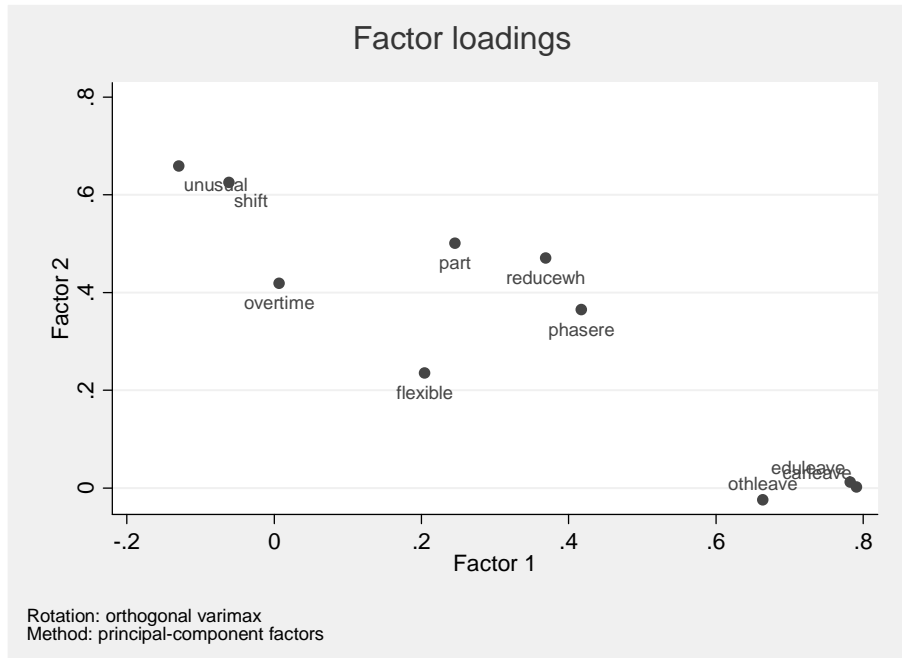


Figure 3-2. Dimensions of working time flexibility components

In conclusion, in this analysis we find two factors to represent the two main latent characteristics grouping working time arrangements. We also find that the factors can be distinguished as flexibility for employees and flexibility for employers factors. They are not in one linear continuum as depicted in Figure 3-1, but are more likely to be two dimensions as depicted in Table 3-1, where Factor 1 represents the employee-oriented working time flexibility component (WTFC) and Factor 2 represents the employer-oriented working time flexibility component.

¹⁰ We also run a one-factor analysis outcome to make sure that there are no linear relationships found between the components, and as expected, the result does not show negatively correlated factor loadings between the two different types of arrangements. Results could be provided upon request.

4.2. Robustness of factors

The results in the previous section have been derived from the inclusion of all establishment cases from all countries and sectors in the ESWT. This type of pan-European pan-sector analysis may raise problems because it gives natural weights to large countries, such as Germany, France, and the UK, as well as giving weights to large sectors, such as Manufacturing sector. Due to this, we test the robustness of the factor results found, by examining the two factor varimax analysis outcomes separately for each of the 21 countries and for each of the 13 industries included in the survey.¹¹

The outcomes show that the four arrangements that facilitate flexibility needs for both employers and employees, namely phased retirement, flexible working hours, part-time work, and right to reduce working hours, show some deviations across countries and sectors. In some countries and sectors, these variables do not necessarily have equal loadings for both factors, with some even showing no or slightly negative loadings on the other. This may be interpreted as these arrangements being geared more towards either employees or employers, in different countries and in different sectors. Country deviances, for example, can be noticed in Denmark, Finland, and Sweden. Here, the arrangements that have been theoretically defined as facilitating the flexibility needs for both parties, have higher loadings on the employee-oriented WTFC than the European average, while having lower or even negative loadings on the employer-oriented WTFC. The opposite effect is seen in countries such as the UK.

In addition, when examining the results for each country and sector separately, overtime and very infrequently other leave also show deviations from the results of the pan-European pan-sector factor analysis. Overtime having high loadings on the employee-oriented WTFC may be due to the fact that it is sometimes taken up by workers voluntarily for additional income (see chapter 1 for more on this argument). It may also be due to workers taking up long leave, without any additional workforce being employed in the company to do the person's job, co-workers must work overtime to supplement the increased workload per person.

¹¹ Results can be provided upon request.

Regardless of such deviations, from examining European establishments it can be concluded that the most prominent characteristics that can group the arrangements are the extent to which they facilitate employees' needs for flexibility and the extent to which they facilitate employers' needs for flexibility.

5. Dependent variable – count method vs. factor scores

In this section, we derive the dependent variable used in the rest of this study, based on the analysis outcome of the previous section. We examine two methods here, namely what can be referred to as the count method and the factor score method.

5.1. The count method

In the count method, the outcomes of the factor analysis are used to confirm that arrangements can be grouped into two categories, but the use of the outcome of the analysis ends there. Based on the analysis outcomes in Table 3-5, working time arrangements used in European companies can be divided into working time arrangements for employee and working time arrangements for employers. In this case, the arrangements which are for both, (those grouped in the second factor in Table 3-4) can be divided to one side or the other through the sub-questions on the motivation for the use of the arrangements which were asked in the survey. The motivations can be grouped into three categories. They are establishments that use the arrangements mainly for the needs of the establishment, those that use it mainly for the needs of employees, and lastly those that use it for both or other reasons. For part-time work, the survey question was asked in a direct manner, i.e., whether it was introduced to facilitate the need of employees or employers. However, this was not the case for all arrangements. For flexible working hours, the reasons for its use were asked in the following categories; 1) reduce paid overtime hours, 2) make working hours more adaptable to variation in workload, 3) enable employees to better combine work and family or personal life, 4) cope with commuting problems 5) other. The former two answers are considered as flexible working hours used for the

establishments, and the latter two answers representing that the arrangement was used more so for employees. For phased retirement, the question asking whether the establishments encourage or prevent the use of the arrangements was used to decide if the arrangement was there to facilitate establishments' needs or employees' needs. For the right to work part-time or right to reduce working hours, there are no direct motivation questions linked to the use of this option. However, we can use the information derived from the use of part-time work for this arrangement. For companies where part-time work is not being used, there are no motivation questions to refer to, country and sector averages can be taken and imputed for the company.

Although this method can be useful, the reasons behind the use of an arrangement are not always clear cut. Firstly, we have the problem of reliability of the managers' answer. Managers may not always answer truthfully or they may not know the actual motivation of the workers he or she employs. In addition, there may be variance amongst workers on the motivation of taking up an arrangement, thus making it almost impossible to measure true motivation for the use of an arrangement at the company level. Similarly, the motivation may change over time. We can think of a worker who has taken up part-time work to balance work and life, but later on could not change to full-time work when their need has ceased, due to the persisting need of the employer. Lastly, the motivations may essentially always be for both sides. For example, Plantenga and Remery (2005) note how all employee-oriented work-family arrangements are in fact only introduced when employers find it profitable to use them as well.

Using the motivation questions we can arrive at scores for working time flexibility for employees and those for employers for each company, using the equation method in box 1.

Box 1: Calculations to derive working time flexibility scores using the count method

Working time flexibility for employees = [leave for care + leave for education + leave for other purposes + phased retirement for employees' needs + flexible working time arrangements for employees' needs + part-time for employees' needs + right to reduce working hours for employee's needs]

Working time flexibility for employers = [overtime + unusual hours + shift work + phased retirement for employers' need + flexible working time arrangements for employers' need + part-time for employers' need + right to reduce working hours for employer's needs]

Theoretically, the scores can range from 0 to 7, 0 meaning the company does not use any of the working time flexibility option, 7 meaning they use all of those that are measured here. When using this method, we are putting equal weights on all of the arrangements that are used in the analysis. Thus, we are saying that of all the arrangements examined have equal amount of importance that contribute to the score of working time flexibility components. However, this may not always be the case, and some may be more important while others less. Thus, this method could be critiqued for its arbitrary weighting of the arrangements. Using the factor score is a solution to this problem.

5.2. Factor score method

Factor score method uses all the information derived from the outcome of the factor analysis as shown in Table 3-5. We can arrive at factor or component scores for each company for each component. In this method, the working time flexibility is measured through the extent to which the latent factors (variables) that are found through factor analysis are being used within each establishment. Here the weight each arrangement has in defining the component, is derived by the statistical analysis outcome and not arbitrarily by the researcher. In other words, we can say we are "letting the data speak for itself". For example, the emphasis given to the long leave schemes in defining the employee-oriented component, is due to the high factor

loadings found for these arrangements, which is based on the survey data of the behaviours of firms. Likewise, for the employer-oriented component, the emphasis given to unusual hours and shift work also comes from the data.

This method is not without problems. Although we can see that there are two latent characteristics/factors that group the arrangements as the results show, we cannot be certain that the factors are in fact what we believe them to be. In other words, although we believe that the factors here represent the degree to which the flexibility arrangements used are employee-oriented or employer-oriented, it may also represent something else. Factor analysis does not allow one to test if the latent factors derived are indeed the concepts one means to measure. However, based on the theories and previous studies on working time flexibility, we can presume that what is being captured through the analysis is indeed working time flexibility for employees and employers.

For this study, we choose the factor score method because it has the least involvement of arbitrary decision of the researcher. In addition, we choose this method over the count method because it is the most commonly used method to derive small sets of concepts from large number of variables (for example, CEC, 2006a; CEC, 2007b; Philips and Eamets, 2007; Bekker and Chung, 2009). Lastly, using the motivation questions has a drawback that there are more missing cases for these questions. This would decrease the number of observations that could be included in the analysis even further. Although we choose the factor method instead of the count method to derive our dependent variable, we do not suspect that there will be very large differences in the results or the conclusions made from the two types of methods (for studies using the ESWT data set and the count method see Chung, 2007; Chung, 2008).

As we can see from Table 3-6, using the factor score method we can arrive at two different components, thus two different variables, i.e., the employee-oriented WTFC and employer-oriented WTFC. This score can be seen as following a normal distribution, with a mean of zero and the standard deviation of one. The minimum score of employee-oriented WTFC is -1.63 and for the employer-oriented WTFC is -2.27. The maximum scores for both are 2.21, and 2.46 respectively. Also, we have

now 15787 observations out of the 21031 initial observations, due to the company cases where there the information on any one of the arrangement was missing.

Table 3-6. Summary of factor scores for employee-, and employer-oriented working time flexibility components

Variable	Observations	Mean	Standard D.	Min	Max
Employee-oriented WTFC	15787	0.10	1.01	-1.63	2.21
Employer-oriented WTFC	15787	0.14	1.05	-2.27	2.46

5.3. Country averages and clusters

Table 3-7 represents the mean score per country and the number of observations (establishments) included per country. As we can see the number of countries included is approximately 750 per country, after excluding the cases with missing values. Larger countries, such as Germany, Spain, France, Italy, and the UK, have more cases, and smaller countries, such as Ireland, Luxembourg, Latvia, Cyprus, and Slovenia, have smaller number of cases. The WTFC scores vary across countries, but, we can find large variations within the countries as well. The issue of between-country and within-country variation will be dealt with in the following chapter, chapter 4.

From Table 3-7, and Figure 3-3, we can also see that there seems to be a positive relationship between employee-oriented WTFC and employer-oriented WTFC, at least at the aggregate macro-level. In other words, countries with a high average score of employee-oriented WTFC are also likely to have a high average score of employer-oriented WTFC. This implies that at least at the national level, the two types of working time flexibility seems to be compatible. However, this positive relationship between the two types of WTFC does not always hold between company within countries (see last column of Table 3-7). In some countries such positive relationships can be found, whereas in others, negative relationships are found. However, in both cases, the strength of the relationships is not very strong. The relationships found for the two types of working time components also seem to be in

line with our third hypothesis, that the working time components are not necessarily on a linear continuum but are dichotomous categories.

Table 3-7. The number of observation included in the analysis per country, and their respective working time flexibility component score per country

	Observations	Employee-WTFC	Employer-WTFC	Correlation
Belgium	806	0.07	0.19	0.07*
Denmark	719	0.81	-0.11	0.02
Germany	1299	-0.03	0.25	0.00
Greece	839	-0.60	-0.82	- 0.09*
Spain	1146	-0.37	-0.46	- 0.08*
France	1299	-0.12	0.13	0.09*
Ireland	353	-0.08	0.13	0.11*
Italy	1096	-0.30	-0.28	0.04
Luxembourg	268	-0.29	-0.06	0.03
Netherlands	787	0.37	0.03	- 0.05
Austria	709	-0.35	0.11	0.14*
Portugal	587	-0.48	-0.90	- 0.05
Finland	783	0.95	0.06	- 0.04
Sweden	789	0.56	0.29	- 0.12*
UK	987	0.07	0.43	0.09*
Czech Rep.	730	0.11	-0.03	0.00
Cyprus	285	-0.54	-0.37	- 0.02
Latvia	387	-0.06	0.12	- 0.06
Hungary	728	0.08	-0.73	- 0.08*
Poland	865	0.71	-0.27	-0.17*
Slovenia	325	-0.21	-0.42	-0.17*
All	15787	0.10	0.14	0.06*

Note: the mean score per country is establishment weighted.

*: represent those which are of significant at the 95% level or more.

Correlations represent the correlation between employee-oriented WTFC and employer-oriented WTFC per country.

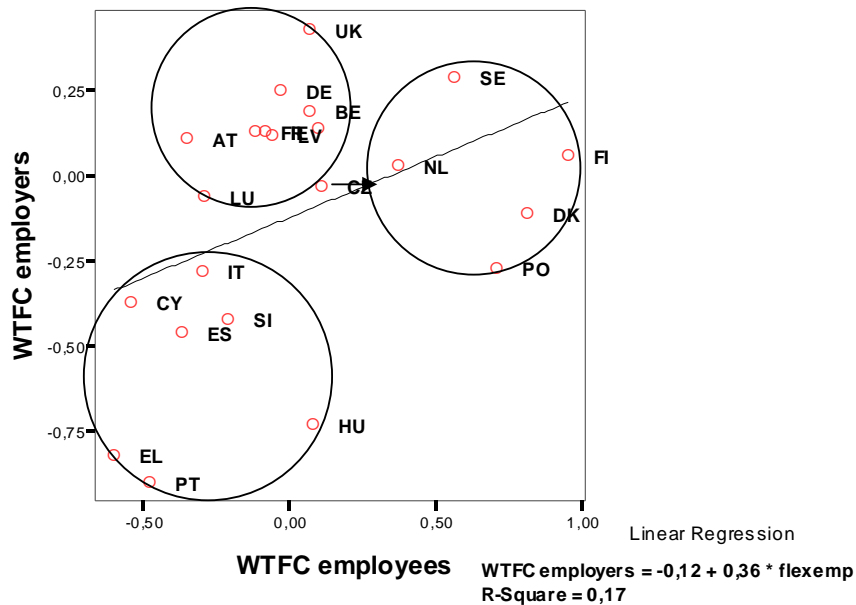


Figure 3-3. Average working time flexibility component score per country and their respective groupings

When we examine the country average scores closely, we can see a pattern between countries. To find a statistical grouping within the 21 European countries included in the analysis, we run a cluster analysis on the country average scores. Cluster analysis seeks to identify homogeneous subgroups of cases in a population. It establishes group membership by identifying a set of groups with both minimum within-group variation, and maximum between-group variation (Garson, 2009). The difference between factor analysis and cluster analysis is that factor analysis group variables together, while cluster analysis groups cases together (see Aldenderfer and Blashfield, 1984; Garson, 2009 for more on cluster analysis). Of the various types of cluster analysis we use the hierarchical cluster method. In hierarchical clustering methods, the researcher can select the definition of distance, as well as the linking method for forming clusters. These choices are then used to determine how many clusters best suit the data (Garson, 2009). Here we use the Squared Euclidian distance for the definition of distance. When a given pair of cases is plotted on the x and y axes, the Euclidean distance is the square root of the sum of the square of the x difference plus the square of the y distance (see equation below). Squared Euclidean distance places

greater emphasis on objects further apart, thus increasing the effect of outliers, and is the default for interval data (Garson, 2009).

$$d = \sqrt{\sum_{i=1}^n (x_i - y_i)^2}$$

In addition, for the method of grouping, we use Ward's method. Ward's method calculates the sum of distances from each case in a cluster to the group mean of all variables to find the minimum distance within the group, to find the grouping with the least sum of squares. This method is preferred by many researchers for it is an ANOVA-type approach which maximizes between group differences and minimizes within-group distances, thus optimizing the F statistic. This method tends to create clusters of small size (Garson, 2009). Based on Ward's Method and Squared Euclidean distance measurements, we find three clusters of countries as shown in Figure 3-3.

The first distinct country grouping found is the southern European country grouping, including Greece, Portugal, Spain, Italy, Cyprus, and two new accession countries which are also located in the southern eastern part of Europe, Slovenia and Hungary. These countries show a low average score of both employee-oriented WTFC and employer-oriented WTFC. The second country grouping includes all the northern European countries, that is, Denmark, Finland, Sweden, the Netherlands, and also Poland and the Czech Republic. These countries can be characterised as having high average score of both employee-oriented WTFC and employer-oriented WTFC. Thirdly, we find the last grouping, which consists of Austria, Belgium, France, Germany, Ireland, Latvia, Luxembourg, and the UK. These countries can be characterised as having as high average score of employer-oriented WTFC as the northern European country grouping, however, not having as high scores of employee-oriented WTFC, although higher than that found for the southern European country grouping. Table 3-8 summarizes the results found for country clustering.

One thing to notice is that with the exception of the Nordic country group and the southern European country grouping, the country groupings does not reflect the commonly known welfare state regime clustering (Esping-Anderson, 1990; 1999), nor

the grouping shown in the varieties of capitalism approaches (Hall and Soskice, 2001). In other words, there seem to be something other than the issues raised in the two studies that determine how countries differ in the issues of working time practices. This issue will be explored further in chapter 5.

Table 3-8: Country clusters based on their scores on two working time component score

Country	For employees	For employers
Denmark, Finland, Sweden, the Netherlands, Poland, and the Czech Republic	High	High
Austria, Belgium, France, Germany, Ireland, Latvia, Luxembourg, and the UK	Medium	High
Cyprus, Greece, Italy, Hungary, Portugal, Slovenia, and Spain	Low	Low

6. Conclusions

Despite the growing interest in working time flexibility, there were limitations to the previous studies in that there is yet to be a generally accepted method, in which working time arrangements could be examined not separately, but in combination. This chapter explores how working time flexibility arrangements can be grouped empirically, using data of the ESWT 2004/2005. In this chapter we proposed a new way to compare working time flexibility, across not only countries but companies, namely through the use of the working time components approach.

In this chapter, we set three hypotheses to test the components approach in measuring working time flexibility, and also to explore its characteristics. Our first hypothesis was that working time arrangements are not single entities but can be grouped into bundles of working time components. Secondly, based on previous theories, the extent to which the arrangements facilitate the needs of employees and/or employers would be the main characteristic that groups the arrangements. Our third hypothesis was that the employee- and employer-oriented components do not have a linear relationship, but are two different dimensions of working time flexibility. These

hypotheses were confirmed by our factor analysis outcome. We found two main factors grouping the working time arrangements. The grouping of the factors represents whose needs the arrangement facilitates, notably, the employer or the employee. In addition, we did not find one single dominant factor of working time flexibility, which may represent a linear relationship between the two characteristics, but employee-oriented and employer-oriented components, as separate dimensions. We have tested the stability of the factor analysis outcome, by examining the separate outcomes per country and per industry. The outcome shows that although there are some deviations from the pan-Europe and pan-industry outcome, the naming of the factors as employee-oriented working time flexibility component, and employer-oriented working time flexibility component, can be interpreted as holding rather stable.

In this chapter, we have also examined the possible ways to use the analysis outcome of working time components, to derive dependent variables that examine working time arrangements in combination. Based on the factor analysis outcome and factor loadings, we have concluded with the use of working time component scores as the dependent variable, i.e., the employee-oriented working time flexibility component score versus the employer-oriented working time flexibility component score. This method simplifies the way we examine working time arrangements and allow us to take a more holistic view of companies' working time strategies in comparison to examining arrangements separately, which was the predominant method until now.

Based on this components method, we found average country scores and country groupings. From this we can see that there are three clusters of countries. Firstly, there is the southern European country cluster, where the average company in these countries do not use much working time arrangements, neither for the establishment nor for the employees. Secondly, we find the northern European country cluster, where both working time flexibility components are used extensively. Lastly, we find the country cluster with the rest of the countries included in the analysis, where the employer-oriented working time component score is high,

comparable to that of the Nordic countries, yet their employee-oriented working time component score is in between the northern and southern European country clusters.

Lastly, there are some points that need further investigation. The discussion on the pan-European analysis versus the country and industry specific analysis is one point. If each country or sector would reveal different results, would this lead to separate groupings, and thus to different scoring methods depending on which country and sector we were examining? It could also entail that we are comparing apples and oranges: that the arrangements, however universal, mean different things in different national contexts. Some have mandatory characters in some countries, which may disrupt the picture. For this reason, it may be fruitful to investigate further to see whether there are problems of comparability among some of the arrangements included in this study. This is not possible in this study due to the limitation of the data available. Finally, the ESWT data does not include sufficient information on the take-up rate and patterns of arrangements in companies. If the analyses had not been performed on the dichotomous variable of yes or no, use/availability of arrangements, but on the proportion of the relevant workforce in the company using/with access to the arrangement, our analyses might have revealed different results. However, for such study a match employer-employee survey is needed.

Chapter IV. Do countries matter? Determinants of working time practices

1. Introduction

Do countries matter, particularly compared to other aspects that affect the behaviour of companies in regards to labour market flexibility? In the previous chapter, we have shown that there are two components of working time flexibility that signify the demand for flexibility: employees' demands and employers' demands. In this chapter, our interest is in examining what can explain the differences between companies in the way they take up these two working time components. Our key interest here is to examine to what extent countries matter in explaining the differences between companies' working time practices.

Many studies that deal with labour market and welfare state issues assume there is significant cross-national variance in the behaviour of individuals and companies. Country characteristics, whether formulated as institutions or culture, are considered to be an important factor, if not the most important determining factor in explaining the behaviour of individuals and companies. In much of the labour market flexibility literature, labour market institutions themselves are used as proxies for measuring flexibility (for example, Pissarides, 1990; Layard, Nickell and Jackman, 1991; Nickell, 1997; Scarpetta, 1996; Elmeshev et al., 1998; Esping-Andersen, 2000; Regini, 2000). In these studies it is presumed that institutions affect, if not determine the behaviour of actors within institutions. It is also believed that, despite variation across countries, the behaviour of actors within the country is rather homogenous for this reason. In other words, being in the same country is more important for determining behaviour than, for example, being in the same line of business or having a company of a similar size, or workers sharing similar characteristics of gender or occupational level. However, contrary to this line of thinking, some theorists argue that company-level characteristics are more important for determining company behaviour; companies are not necessarily restricted by the boundaries of the country

in which they are located or by country's institutions. The same could be said for the case of individual behaviour.

With this in mind, this chapter examines the question whether countries really do matter and to what extent the micro-level behaviour of flexibility can be explained by country characteristics. More specifically, this chapter examines the shop-level practices of working time flexibility of European companies, to examine the extent to which country differences can account for the differences between company practices on working time. This is done by comparing the variance of flexibility practices attributed to three different levels: the country level, sector level, and the individual level. When we examine the variance attributed to the country level, we take composition effects into account. Composition effects are the differences observed between countries stemming from the fact that each country is composed of companies with different characteristics. By using a multi-level model in this study, we are able to explain the share of variance attributed to country characteristics, which remains after controlling for various observable company-level characteristics.

In addition, we examine how company characteristics can have different impacts on the use of working time components in different countries. In most sociology and labour market studies, it is common to presume that we can find an average relationship that is applicable to all countries in the analysis. However, this is not always the case. Thus, in some countries a particular company characteristic can be influential in explaining the use of companies' working time practices, while in others it may prove to have no impact at all or to have even an opposite impact. Again, using a multilevel model we are able to investigate which company characteristics determine companies' working time practices and how these effects differ across countries. Here we focus more on the different effect industrial relations variables can have across countries, as well as the effect of being within the public sector. These are chosen out of the company level determinants because they are closely related to the institutional characteristics of the country, and are liable to change through policies. The question of *why* countries matter, thus explaining the variance observed at the country level through various country level characteristics, is analysed in the next chapter.

The structure of this chapter is as follows. Firstly, in section 2, we look at theories of the predictors of labour market flexibility. Here we examine factors that can affect company behaviour based on previous studies, focusing on company characteristics that determine companies' working time practices. In section three, the outcomes of the analyses are presented. Firstly, the issues concerning country level variance are addressed, as well as the outcomes of the multilevel regression analysis, which shows the company characteristics that determine company practices of working time. Also in section three, the cross-national variance in the effects of company level determinants are examined. The chapter ends with some conclusions and policy implications in the final section.

2. Determinants of working time practices

2.1. Impact of country characteristics on company working time practices

Rubery and Grimshaw (2003) distinguish between the universalists, culturalist, and institutionalist as the three major schools of thought that theorize about the variation in employment practices. Universalists stress the general applicability of employment relations models across societies and that employment contracts are not dependent on the social context. Within this group, one can find the contingency approach, where it is believed that "the employment system adopted depends upon the characteristics of the organisations and the sector of activity in which it is located" and that "variations between countries are expected to be much salient than variations between organisations, with factors such as size and internal organisational structure, technology, capital intensity, and batch size shaping employment organisation." (Rubery and Grimshaw, 2003: 30). On the other hand, culturalists emphasize the cultural differences between countries, and their respective differences in organisational forms and performances. From this perspective, workers are seen as already having been socialised into a range of norms, beliefs and values when entering an organisation, which then constitute a culture (ibid: 34). Institutionalists, on the other hand, focus on how institutional arrangements and social structures in which an organisation is located and embedded, may account for the differences between

company practices (ibid: 36). While the first approach emphasises the importance of company level characteristics as drivers of employment relations, the latter two emphasise the importance of countries, whether institutions or cultural issues.

Also in the field of management studies, Brewster and Hegewisch (1994) define the Human Resource Management (HRM) model as made up of three different type of environmental factors. These include 1) economic factors: ownership and control, organisational size, structure, growth of an organisation, industry structure, and markets; 2) technical factors: skill, work organisation, labour force requirements of technologies; 3) socio-political factors: the institutional framework, particularly national education and training systems (Hendry and Pettigrew, 1990; Brewster and Hegewisch, 1994). In addition, they see human resource practices of an organisation as being embedded within the sector, and national culture and structure, as well as the organisational structure, including the characteristics of the organisation but also the culture within it.

In the fields of socio-economic research, most approaches presume there are large national differences in flexibility. Most of this is due to the fact that the focus of these studies is on the national variations of flexibility based on the differences found in their institutions (for example, Salvanes, 1997; Regini, 2000; CEC, 2006a; CEC, 2007b; Muffels et al., 2008). However, it is unlikely that country level institutions and cultural aspects could solely determine the practices of flexibility of the firm. Companies are bound by legal restrictions on the use of various working time flexibilities, such as the definition of the normal working hour, overtime, and unusual hours. These regulations are mostly from laws of the country, but may also be derived from sectoral agreements as well as EU directives.¹² However, although regulations and institutions of working time shape the organisation of working time of companies, companies are becoming more and more decentralized, which increases the variance between companies within the same country and sector (Messenger, 2004b; Keune,

¹² The EU Working Time Directive sets a maximum on working time at 48 hours a week, and contains regulations on rest, holidays and night shifts. However, it also includes the individual opt-out clause, where workers can be asked to work more than 48 hours a week if they sign a voluntary agreement with their employers (EC Council directive 93/104/EC of 23 November 1993 concerning certain aspects of the organisation of working time).
http://ec.europa.eu/employment_social/labour_law/docs/directive93_104_en.pdf

2006). It is not always the case that companies stick to legal restrictions, and they might use flexibilities through opt-out clauses or outside the legal boundaries.¹³ On the other hand, companies may also choose not to use any flexibility arrangements at all even if the opportunity is there because there is no need for it.

As for employee-friendly arrangements, companies are bound by law to provide compulsory leaves and other work-life balance oriented working time arrangements, which can be set at the national or sectoral level, as well as at the EU level. However, for various needs, such as recruiting and retaining skilled workers, companies can provide more than the legal requirement on work-life balance arrangements.¹⁴ Through empirical data on establishments, it has been shown that in countries where advanced statutory provisions are present, employers are unlikely to introduce additional family-friendly arrangements. Rather in countries where public provisions are nearly absent, this can lead to larger employer involvement, where employers introduce workplace arrangements according to their specific needs (Den Dulk, 2001; Evans, 2001; Den Dulk et al., 2005). However, this does not necessarily mean that all employers in countries with no public provision on work-life balance issues will always be involved in providing such arrangements. In other words, companies choose their own flexibility strategies and act rather autonomously from their institutional environments (also see, Bredgaard and Tros, 2008). From the studies reviewed, we can see that although country characteristics could play a major role in explaining company practices of working time, there will also be variances within countries between companies, due to the different characteristics and needs of companies. In the next section, we examine various company characteristics that could explain for the cross-company differences in working time practices.

¹³ In a study done by the TUC (Trade Union Congress) in the UK, two-thirds of workers who work longer than 48 hours have not signed the opt-out agreement, which is against national labour regulations (TUC, 2005).

¹⁴ For example, in the Netherlands there have been pressures from the Green party to extend paternal leave from the current two days to two weeks ([de Volkskrant, 15th June 2007](#)). Although there are no legal rights for this longer paternal leave, some private companies have introduced the system, such as the case for PricewaterhouseCoopers in Nijmegen, and & Samhoud (see [de Volkskrant 2nd of May, 2008](#)).

2.2. Company level characteristics and companies' working time practices

There are several company characteristics that can be taken into account when examining between-company differences in working time practices. Seeleib-Kaiser and Fleckenstein (2008) distinguish between structural and agency variables, when examining various company characteristics that can explain why companies take up working time arrangements. Structural variables are characteristics of companies that are unalterable, thus the basic environment in which companies are placed in, whereas agency variables are changeable characters some of which are a part of, or can be influenced by corporate policies. Structural variables include variables such as welfare state regime, socio-economic context, company size, and skills structure and level, while agency variables include management style, organised labour, and female agency etc.

In this section, we examine the literature on the determinants of working time practices focusing on company level characteristics, divided by structural variables and agency variables. Although for reasons of simplicity we have divided the variables into these two categories, the division is not always simple. For example, composition of workers within the company, here recognized as a structure variable, can also be a part or result of management choices, to hire more or less female, skilled workers etc. On the other hand, the provision of work-life balance facilities, although identified as a part of the management policy, thus an agency variable, could be provided as a part of the national policy, thus representing the socio-economic context the company is under. Regardless, we can divide the relevant company level determinants of working time practices as the following. Structural variables includes sector, size, workforce composition, cyclical fluctuation of demand, and the economic situation of the company, and agency variables include industrial relations, use of temporary contracts, and the use of work-life balance facilities.

Structural variables

Sector

Due to the traits of sectors, such as operating hours and the characteristics of the workforce employed, services sectors usually use and provide more flexibility than industry sectors. On the other hand, services sectors are less subject to international competition, thus may not be under as much pressure to introduce flexibility arrangements to enhance global competitiveness. For example, work in unusual hours is shown to be most used in the services industries, namely hotel and restaurants, and health and social work (Kümmerling and Lehndorff, 2007). Part-time work is sometimes used in establishments to deal with problems of scheduling outside normal business hours, for this reason the use of this arrangement frequently occur in sales and service jobs (Blank, 1990; Houseman, 2001; Kalleberg et al., 2003). Although services sectors may provide more work-life balance due to the fact that they employ more female workers, whose need to balance work and life are greater, empirical studies show that there is also diversity between sectors. Galinsky and Bond (1998), based on US firm level studies, found finance, insurance and real estate industries are the most generous work-life balance policy providers, whereas wholesale and retail industries are the least generous. They also found that sector was the best predictor of the presence of work-life balance policies in firms. Similarly, Kümmerling and Lehndorff (2007) argue that the interplay between country and sector is the single most important factor in explaining the differences between the incidences of unusual hours (Kümmerling and Lehndorff, 2007:32).

Many previous empirical studies on companies' provision of work-life balance arrangements point out that, on average, public sector companies provide more arrangements than private ones (Whitehouse and Zetlin, 1999; Evans, 2001; OECD, 2001; Dex and Smith, 2002; Plantenga and Remery, 2005). The reasons are that public sectors are less prone to market pressures and may employ a larger proportion of women. In addition, public sectors are seen to be under more pressure to take gender equality norms into account and to set precedence for other companies to follow (Evans, 2001; OECD, 2001; Plantenga and Remery, 2005). For this reason, public sector organisations often take the lead in adopting work-family arrangements (Den Dulk, 2001; Evans, 2001; Den Dulk et al., 2005). For the same reasons, public companies may not use as much employer-oriented flexibility options that might be detrimental to the working conditions of workers.

Company size

Empirically it has been shown that larger firms have more family-friendly policies (Galinsky and Bond, 1998; Whitehouse and Zetlin, 1998), but when informal policies are taken into account, this effect diminishes (OECD, 2001; Evans, 2001; Dex and Scheibl, 2001; Dex and Smith, 2002; Yasbek, 2004; Plentenga Remery, 2005: 74). While bigger firms have formalized arrangements smaller firms have informal arrangements, which might be more efficient in providing various working time flexibility, and can be more tailor made (Evans, 2001). Similarly, Dex and Scheibl (2001) note how small and medium sized companies were less likely to have devised their arrangements as package or measures, and were more likely to have ad hoc additions to their arrangements as needs arose. In contrast, large enterprises were more likely to have formal policies of fringe benefits as a part of a larger corporate strategy, as well as using more the business case reason for introducing flexible arrangements (Dex and Scheibl, 2001: 418).

Comfort et al. (2003) found differences in the types of employee-oriented flexibility arrangements provided in the smaller firms and larger firms. Whereas arrangements such as flexi-time and tele-work are much more available to employees in small workplaces of fewer than 10 employees, other policies such as child care or elder care, where economies of scale can be achieved, larger organisation of 1000 or more are more likely to provide them. This was also confirmed by the study done by Evans (2001) where he found the size of the company seem to be linked with maternity and paternal leave.

Larger companies have also been linked to more use of employer-oriented flexible arrangements (Houseman, 2001; Jirjahn, 2008). Larger organisations generally have larger and more diverse pools of jobs than smaller ones, and therefore have more opportunities to make some use of flexible staffing arrangements (Kalleberg et al., 2003: 535). Jirjahn (2008) argues that workers in larger establishments are more likely to work overtime in order to undertake the tasks of colleagues who call in sick. For shift work, he finds a non-linear relationship between size of the establishment and shift work (ibid: 154).

Workforce Composition

In previous studies, a higher proportion of female workers within the establishment is linked to more work-life balance policies. Konrad and Mangel (2000) found US firms with greater percentage of female employees are more likely to have extensive work-life balance policies. Dex and Smith (2002) using the Workplace Employee Relations Survey 1998, found the same result for UK firms. Galinsky and Bond (1998) found that having higher proportion of women in top executive positions explain the greater provision of work-life balance policies. They also showed that employers with higher proportion of women in their work force are more likely to invest in policies such as job sharing, part-time work, flex time off and child care, whereas companies with small proportion of women invest in costly options such as paid leaves. However, the relationship between proportions of female workers with the provision of family-friendly policy could be due to adverse selection, where firms with more work-life policies attract individuals who have greater needs for these policies.

Firms employing a large number of professionals are more likely to implement work-life balance policies, as professionals are scarcer, harder to attract, more valuable, and more expensive to recruit and retain (Yasbek, 2004: 10). Also, it may be easier for firms employing a large number of professionals to adopt extensive work-life balance policies, because the expense, value, and scarcity of professionals help to justify the policies' cost and challenges. The dollar value loss of the professional, skilled workers' turnover, distraction work hours, or reduced efforts due to their inability to balance work and other responsibilities, are greater since they are higher paid. Also the high demand, low supply/scarcity for high skilled workers enable these workers to be in stronger bargaining position for these policies as well as giving employers competition for their recruitment (Konrad and Mangel, 2000: 1227). Based on firm studies, it has been shown that companies employing high shares of professionals or skilled workers provide more work-life balance policies (Konrad and Mangle, 2000 for the US; Evans, 2001 for EU; Whitehouse and Zetlin, 1999 for Australia) On the other hand, higher proportions of low-skilled workers have been linked to less work-life balance policies (Galinsky and Bond, 1998; Whitehouse and Zetlin, 1999).

We can also think of the impact of employing many older employees in the establishment. Thus, if companies employ many older workers it is likely to have more retirement related benefit systems as well as other work-life balance policies due to the demand for such arrangements.

High shares of low-skilled workers, on the other hand, could be linked to the use of more employer-oriented flexibility arrangements in the company. Since shift work, and unusual hours are less desirable schedules, low-qualified workforce are sorted into these types of positions (Hamermesh, 1999; Jirjahn, 2008). In addition, as low-earning employees view shift work and overtime as an opportunity to supplement their earnings, it might be less costly to implement these working time arrangements in establishments where there are high proportion of low-skilled, low-earning workers (Jirjahn, 2008: 140). However, in the case of overtime, since employers will demand more overtime work from skilled workers, and since overtime can be linked with promotion opportunities (ibid: 141), establishment with high proportion of skilled workers may also be positively linked with the use of overtime.

Age composition of the workforce within the company may also affect the use of employer-oriented arrangements. Since older workers are more prone to sickness, the use of shift work and unusual hours may aggravate this even more (ibid: 141). Thus, establishments with high proportion of older workers may not use as much employer-oriented arrangements. Whereas, companies with higher proportion of younger workers, especially those before the family formation age, may use more employer-oriented arrangements, without much resistance or costs. This may be because, younger workers may not be as prone to sickness and health issues from the use of employer-oriented working time arrangements, but also due to their relatively weak negotiation positions in the labour market.

Cyclical fluctuation of demand

Companies take up flexibility arrangements to cut cost by quickly adapting workload fluctuations (Houseman, 2001). During times when demand of work is high, establishments could overcome this problem through the use of making workers work longer hours, or using additional workers temporarily. Thus, we could understand the

use of overtime as a substitution to the use of temporary contracts. Shift work could also be used to adapt to workload fluctuation, because instead of having one shift system, companies can implement several shifts during the day make most of the production capacities of their production tools. Both overtime and shift work can be linked to unusual hours, since they are likely to be used outside the normal working hours, such as working evenings, nights as well as weekends, to meet the demands. Companies may use different types of arrangements depending on the duration of the fluctuations. Jirjahn (2008), based on the analysis of establishment data on Germany suggests that shift work is used for medium-term but not for short-term adjustments of production, whereas overtime is linked to short-term fluctuation of demands.

Unlike the employer-oriented working time flexibility, which responds to unpredictable fluctuating demands, employees use working time flexibility to balance work and family life, which normally involves predictable or regular schedules (Rubery and Grimshaw, 2003: 192). From this, we can imagine that the use of employee-oriented working time practices is either not affected by workload fluctuations or if affected, has more to do with longer-term fluctuations, and those which are predictable.

Economic situation of the company

Similarly, economic situation of companies may influence the use of working time arrangements. In economic upswings, companies may use overtime to tackle increase in production demands. It has been shown that in times of economic upswings and labour shortages, companies use extension of working hours to tackle problems of increased demands (EIROonline, 2006). We can predict that companies in bad economic situations may try to tackle these problems through using cost-cutting or profit enhancing policies, such as shift work and unusual hours, to match production closer to business cycles or customers' needs. On the other hand, companies in better economic situations have more financial room to provide better work-life balance policies for their workers, thus may have more employee-oriented working time arrangements.

Agency variables***Industrial relations***

Several industrial relations characteristics have been found to influence companies' working time practices. We could predict that companies with employee-representatives will have more employee-oriented working time arrangements, compared to those without any representative bodies. Dex and Smith (2002) have shown that companies with recognized unions have more family-friendly flexible working arrangements. On the other hand, we predict that companies with employee-representatives will have less employer-oriented working time arrangements. It has been shown that companies with high shares of union members or where unions exist are less likely to use employer-oriented flexible staffing arrangements (Abraham, 1990; Housman, 2001). However, this relationship also depends on the arrangement in question. Based on the US establishment data, Houseman (2001) links the use of part-time work with less unionized establishments with good benefits and lower proportion of full-time shifts. Jirjahn (2008), based on empirical studies based in Germany, finds that shift work has a positive covariance with the existence of employee representatives, while they appear to have no role in the use of overtime.

In addition, we predict that the existence of a collective bargaining agreement for working time arrangements increases the use of working time arrangements, both for employers and employees. This is due to the fact that the existence of the agreement can provide a negotiation platform that enables the introduction of various arrangements. Thus rather than trying to restrict the use of flexibility that is for the other's needs, the existence of a collective bargaining platform may allow for a negotiation that leads to an agreement between employer and employee to introduce various types or arrangements and form a type of a trade-off.

Use of temporary contracts

Since the use of working time flexibility and the use of temporary contracts are both methods used by companies to adapt to business fluctuations, we can think of a substitution effect between the two. There has been a debate on the relationship between internal and external flexibility, whether it was substitutional or

complementary, although the focus has been mostly on relationship between internal functional flexibility and external numerical flexibility (Atkinson, 1984; also see Cappelli and Neumark, 2004 for the counter argument). We can predict that an establishment with fluctuating demands can meet these demands either internally, through changing the work load of their current employees, or externally, through hiring additional staff temporarily. Thus a company using temporary workers may not have a need to use employer-oriented working time arrangements. On the other hand, companies may need to use temporary contracts when they have a worker that goes on leave. Thus in companies that provide leaves extensively, there may be more needs to use temporary contracts.

Use of other work-life balance facilities

We can expect that there are substitution effects between the use of working time arrangements to facilitate work-life balance of employees with the work-life balance facilities used by companies, such as kindergarten, crèche, and other household management related facilities and services. However, services and working time arrangements can also be complementary, where companies concerned with their worker's work-life balance responsibilities will provide both, whereas companies that are not concerned with such issues will provide neither.

Companies that use good benefit schemes have been linked to the use of employer-oriented flexible staffing arrangements (Houseman, 2001; Mangum et al., 1985). Mangum et al. (1985) show a positive relationship between firms' use of temporary agency workers, short-term hires, and on-call workers with the levels of benefits provided within the firm. Thus, companies with higher per unit labour cost, reflecting high wage norms, would have a greater incentive to hire workers outside of their internal labour market, especially to adapt to fluctuating production demands. It is unclear how this relationship would be regards to employer-oriented working time practices. However, using the same line of reasoning, since in these companies the per unit labour cost is expensive, in times of changes in demands for labour, rather than hiring an extra worker companies may try to tackle their problems through the use of unusual hours, shift work, and overtime depending on the need that arose. If this were

to be the case, we can expect a positive relationship between the use of work-life balance facilities with the use of employer-oriented working time arrangements.

2.3. Country variance in the effects of the determinants

Figure 4-1 sums up the relationship between company flexibility practices and company characteristics and the country. Since sector is not a key focus in our study, and can be included as a company characteristic, the sector level is not included in the figure or the study. As we can see, if country level characteristics determine company flexibility practices, it could be seen as being country determinant. If the flexibility practices are determined mostly by company level characteristics, it is company determinant. These company and country characteristics can either be observed or unobserved. The arrows in Figure 4-1 show how the country characteristics can affect companies' flexibility practices directly, shown by the solid line, but also indirectly through affecting the company characteristics, shown by the dotted lines. In other words, of the various company characteristics that can determine a company's flexibility practice, there are those that have different effects across countries. Brewster and Hegewisch (1994) argue that organisational characteristics are not separate from the national culture and structure, but embedded within it. In other words, various organisational characteristics are influenced by the country characteristics, in which the organisation is located in. This suggests a cross-national variance in the impacts of company or organisational characteristics, on the company flexibility practices, because they are embedded in different national environments. For example, in a study examining the public-private difference in the provision of work-life balance arrangements, Chung (2008) shows how the effect of being a public sector has different implications across different European countries. Thus, in the average European company, being a public company has no effect on the provision of work-life balance arrangements. However, for most of the EU-15 countries, public companies indeed provide more arrangements than private sectors, whereas for the new accession countries and some southern European countries, private companies provide more (ibid: 199).

Of the various company characteristics, it is likely that company characteristics that are linked to country institutions and culture have different effects across countries. These will most likely be the industrial relations related characteristics, such as the existence of employee-representatives within the establishment, the existence of collective agreements on working time within the establishment, as well as the effect of the establishment being within the public sector.

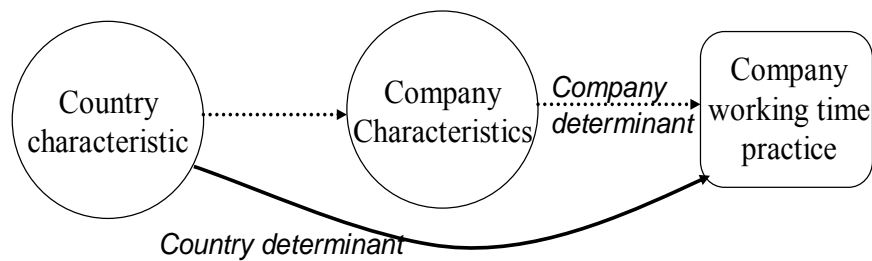


Figure 4-1. Determinants of company level working time organisation

Note: the solid line represents the direct effect of countries, whereas the dotted lines represent the indirect effect of countries

2.4. Hypotheses

Based on the literature review and previous studies examined in this section, we can come to the following hypotheses.

Hypothesis 2: Country differences do not explain the majority of the variance found in the working time practices across European companies, and large differences can be found between companies within countries.

Hypothesis 3-1: There are several company level characteristics, such as its size, line of business, composition of its workforce, its industrial relations aspects, work load fluctuations etc., which can explain for the use of various working time flexibility bundles. (Specific hypothesis could be found in Table 4-1)

Table 4-1. Summary of the company level variables and hypotheses

Variable	Effect on working time flexibility for employees	Effect on working time flexibility for employers
Structural variables		
Sector	Services sector has more of both employee-, and employer-oriented working time flexibility arrangements	
Public sector	Public companies have more employee-oriented working time arrangements, this relationship may differ across countries	Public companies use less employer-oriented arrangements, this relationship may differ across countries
Size	Bigger companies have more formal arrangements both for employees and for employers Smaller companies have more informal arrangements	
Composition	Companies with higher proportion of female workers, skilled workers, and older workers use more employee-oriented arrangements	Companies with higher proportion of skilled workers and older workers use less employer-oriented arrangements, companies with more younger workers use more employer-oriented arrangements
Workload fluctuations	No relationship or predictable longer-term fluctuations are positively related to the use of employee-oriented arrangements	Companies with workload fluctuations, especially in the short-term, use more employer-oriented arrangements
Economic situations	Companies in good economic situations use more employee-oriented arrangements	Companies in bad economic situations use more employer-oriented arrangements
Agency variables		
Employee-representatives	Companies with employee-representatives have more employee-oriented arrangements, this relationship may differ across countries	Companies with employee-representatives use less employer-oriented arrangements?, this relationship may differ across countries
Collective agreement on working time	Companies with collective agreements on working time use more working time arrangements, this relationship may differ across countries	
Use of temporary contracts	Companies using leaves will use more temporary workers to fill up the gap	Substitution: Companies using temporary contracts will not use working time flexibility for their needs if or numerical flexibility is met Complementary: companies using numerical flexibility will use it both internally and externally
Work-life balance facilities	Substitution: companies using work-life balance facilities to facilitate work-life balance will not use working time arrangements Complementary: companies providing work-life balance policies will provide both working time arrangements and facilities	Companies using work-life balance facilities will use employer-oriented working time flexibility instead of hiring new workforce

Hypothesis 3-2: There is cross-national variance in the effect of various company level determinants on working time practices.

These hypotheses will be tested using the ESWT data sets in the next section.

3. Analyses outcomes

In this section the analysis outcomes are examined. Firstly, we examine the variance that can be attributed to each level, that is, the country, sector and company. Secondly, we examine the various company characteristics that can explain the variance between companies in their working time practices. Thirdly, the cross-national variance of the effect of company characteristics is examined. Lastly, we end with a brief summary of the analysis results found in this section.

3.1. Variance of each levels

To see to what extent each of the different levels explains the variation of the provision/use of flexibility arrangements within a company, a multilevel analysis was done using ML Win. In the first analysis, we use the company (level 1), sector (level 2), and country (level 3) as levels to examine the variance of each levels. This relaxes the assumption of sectors and countries being of a fixed nature (for more on levels in multilevel analyses, see chapter 2). In the further analyses to examine the country effect on the various factors, the model is restricted to 2-levels, that is, the company (level 1) and the country level (level 2).

When it is presumed that there are three levels in the analysis; the country, the sector and the company, the variance of the country level can be obtained through using the model (2.3). If y indicates the working time component score β_0 represents the coefficient for the constant, which is not shown because its value is 1. i represents the company level, j the sector level, and k the country level. Thus, here in the equation, v represents the country level error term, u represents the sector level error term, and e represents the company level error term. When the overall variance of the company factor score is partitioned for each level, the variance that is attributed to the country level can be shown as σ_v^2 , that to the sector level σ_u^2 , and that to the company

level σ_e^2 . Thus the intra-class correlation coefficient (ICC), thus the proportion of variance attributed to the third level, the country level, of the total variance, is derived by the equation below. Using our data we can find the country, sector, company level variance as Figure 4-2.

$$\begin{aligned}
 y_{ijk} &= \beta_o + v_k + u_{jk} + e_{ijk} \\
 v_k &\sim N(0, \sigma_v^2) \quad \forall k \in (1, \dots, K) \\
 u_{jk} &\sim N(0, \sigma_u^2) \quad \forall j \in (1, \dots, J) \\
 e_{ijk} &\sim N(0, \sigma_e^2) \quad \forall i \in (1, \dots, I)
 \end{aligned}
 \tag{2.3 repeated}$$

Note: i = company level, j =sector level, k =country level
 y_{ijk} = dependent variable, β_o = coefficient for constant, v =country level error, u =sector level error, e =company level error

$$\text{Country portion of variance} = \frac{\sigma_v^2}{\sigma_v^2 + \sigma_u^2 + \sigma_e^2}
 \tag{2.11 repeated}$$

$$\text{Sector portion of variance} = \frac{\sigma_u^2}{\sigma_v^2 + \sigma_u^2 + \sigma_e^2}$$

$$\text{Company portion of variance} = \frac{\sigma_e^2}{\sigma_v^2 + \sigma_u^2 + \sigma_e^2}$$

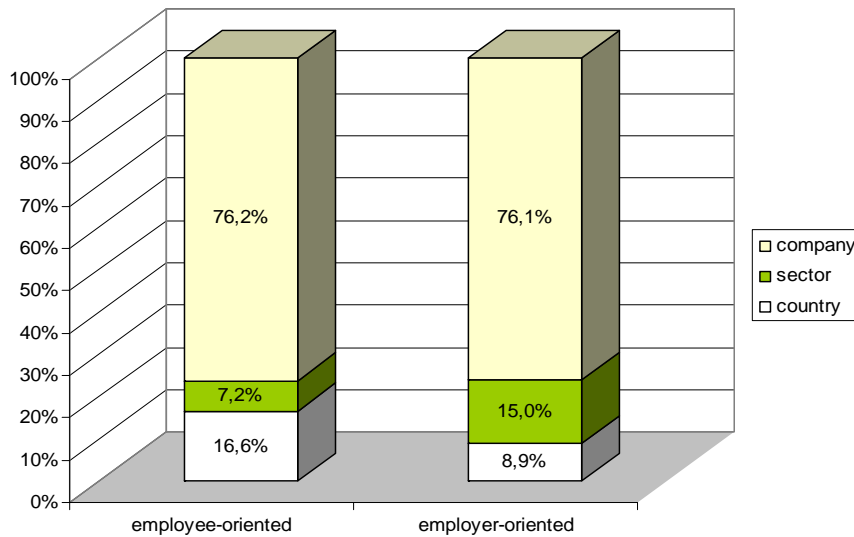


Figure 4-2. Variance of working time component scores attributing to three levels

As we can see from Figure 4-2, the country level takes up 17 percent of the total variance across companies in their employee-oriented working time flexibility component scores. Only 7 percent can be attributed to the sector level, and the rest, 76 percent to the company level. On the other hand, the country level only explains 9 percent of the total variance across companies in their employer-oriented working time flexibility component scores, whereas, 15 percent of the variance can be attributed to the sector level, and 76 percent can be attributed to the company level. From this we can confirm our first hypothesis that despite that the differences between countries do exist, we find more variation within countries, and within sectors, and between companies. This within-country variance is larger for the case of employer-oriented arrangements. In addition, sectors do not explain much of the variance found in the use of employee-oriented WTFC but they do explain for a substantial amount of variance for the employer-oriented WTFC. Despite these differences, what we can say is that we observe a substantial heterogeneity between companies, within countries and within sectors, in their practices of working time.

Just to reconfirm this conclusion we run a similar model, using an OLS regression model, where sectors and countries are considered to have a fixed nature and are included in the model as dummy variables. In this model, the country

dummies explain 15.9 percent of the variance for the employee-oriented WTFC. When only sectors are taken into the model, the explained variance is 7.2 percent. For the employer-oriented WTFC, country dummies explain 11.7 percent of all variance, while sectors explain 8.3 percent. As we can see, there are some differences between the multilevel model and the OLS regression outcomes, the same conclusions can be made concerning that, countries explain less than 20 percent of the variance found in companies in their practices in working time, and this is smaller for the employer-oriented WTFC. Also, sectors do not explain for much of the variance, although it is slightly higher in the case of employer-oriented WTFC.

Now we introduce our base model, where the explained variance of the latter models, that include various predictors, are compared against. In this model, the country is taken as the second level, the company as the first, both levels allowing for random intercepts, but with no predictors included in the model. The model can be shown as the equation (2.7) below, and the explained variance can be calculated as (2.10). In this model, the empty model, the variance attributed to the country level is 16.7 percent for employee-oriented WTFC, and 11.9 percent for employer-oriented WTFC.

$$\begin{aligned}
 y_{ij} &= \beta_0 + u_j + e_{ij} \\
 u_j &\sim N(0, \sigma_u^2) \quad \forall j \in (1, \dots, J) \\
 e_{ijk} &\sim N(0, \sigma_e^2) \quad \forall i \in (1, \dots, I)
 \end{aligned}
 \tag{2.4 repeated}$$

Note: i = company level, j =country level
 y_{ijk} = dependent variable, β_0 = coefficient for constant, u =country level error, e =company level error

$$\text{variance attributed to the country level } \rho_{country} = \frac{\sigma_u^2}{\sigma_u^2 + \sigma_e^2} \tag{2.10 repeated}$$

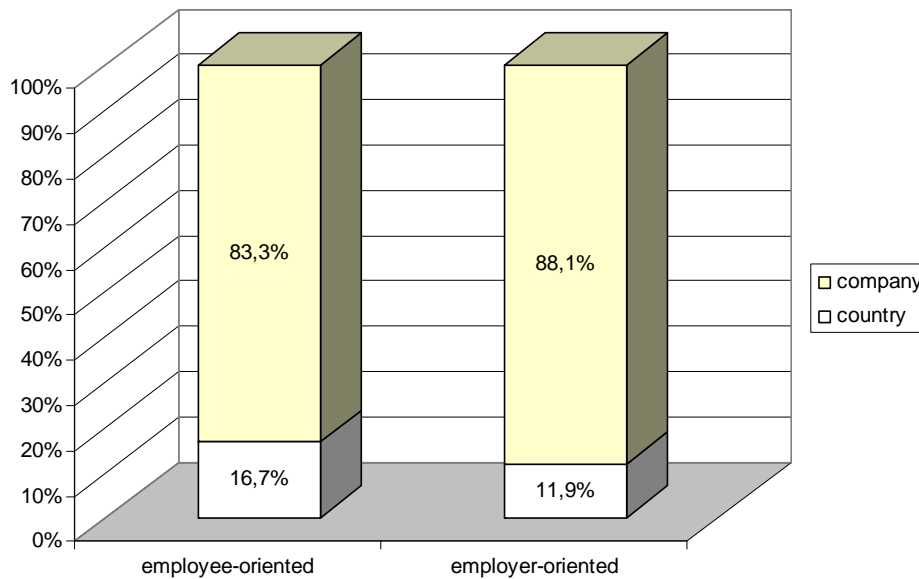


Figure 4-3. Variance of working time component scores attributing to two levels

The variance within the country is different across countries. Thus in some countries there are more variance between the companies, while in others there is less (See Figure 4-4 and Figure 4-5).

For the variance in the employee-oriented WTFC, we can see that in some of the southern European countries, that is, Greece, Cyprus, Portugal, Italy, and Spain, along with Hungary and Latvia, there is not as much within-country variance, compared to the rest of Europe. Also, with the exception of Hungary, we can see that the average score of employee-oriented WTFC of these countries are low as well. Thus, we can conclude that companies in southern European countries on average do not use much employee-oriented working time practices, and there is not much difference between companies within these countries in this respect. In the Nordic countries, that is Denmark, Finland, and Sweden, the average company seem to use more working time flexibility arrangements to facilitate the needs of workers, but the difference between companies is also not large. Thus, companies in these countries act similarly in that they provide more arrangements to facilitate workers needs, than companies in other European countries.

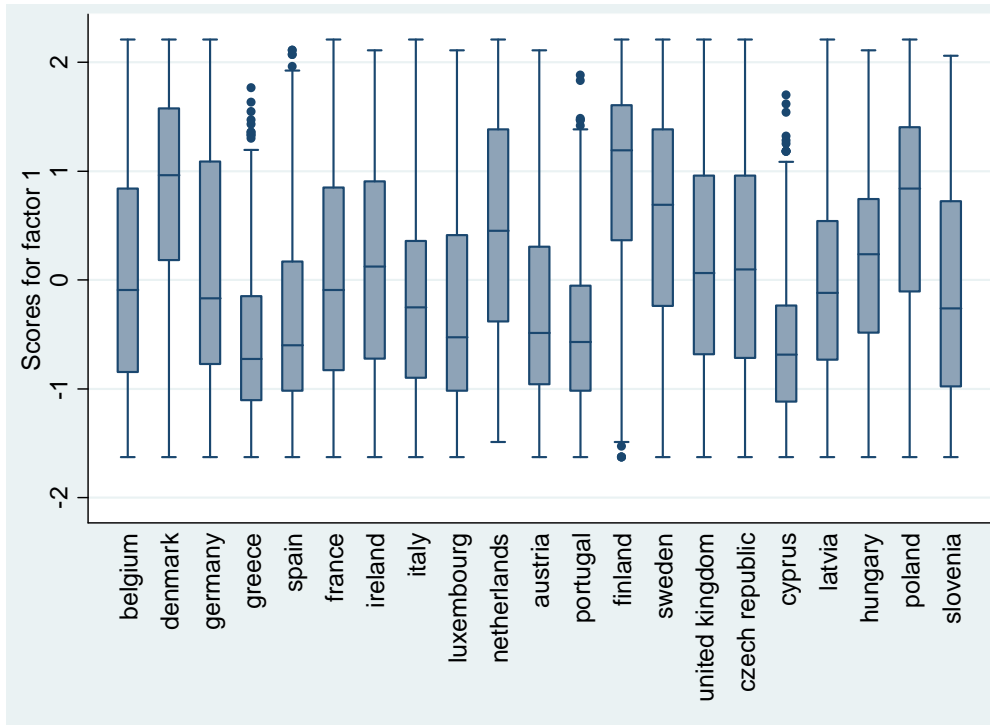


Figure 4-4. Variance of employee-oriented working time component per country

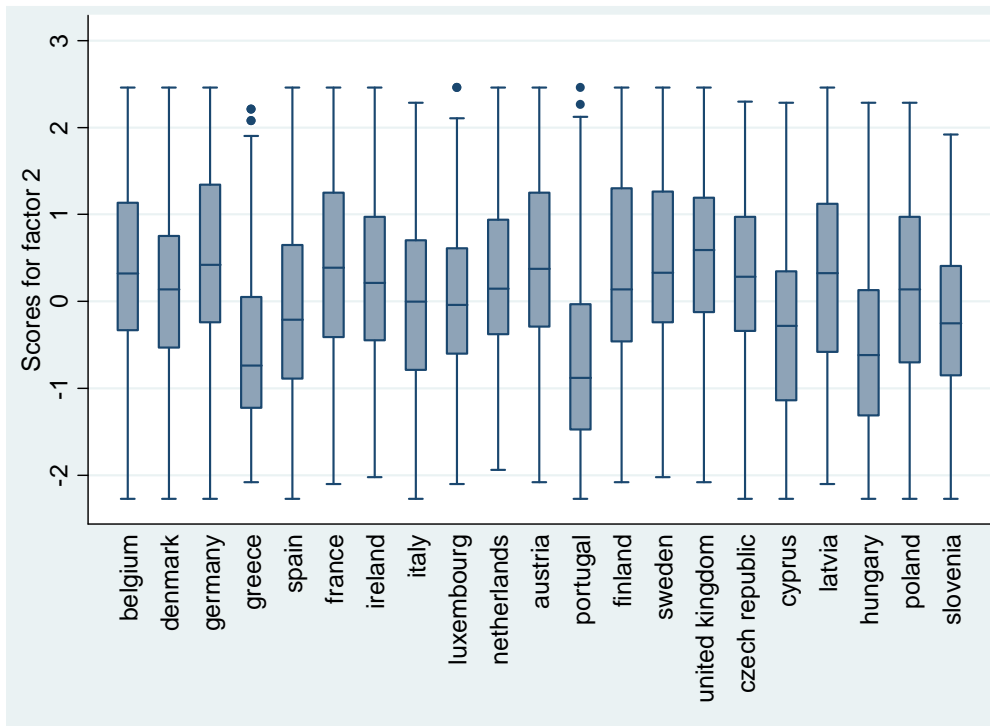


Figure 4-5. Variance of employer-oriented working time component per country

Germany, Czech Republic, Ireland, the Netherlands, Belgium, and Slovenia, on the other hand, have very large variation within the countries. However, the average employee-oriented component scores for companies in these countries approximately around the European average.

In the case of employer-oriented working time components, we can see that there is even a larger variance within countries between companies. However, we can see that the variation between countries is not large. As noted in Figure 4-2 and 4-3, the variation between countries is about half of what we can find for the case for employee-oriented components. In Figure 4-5, we can see that the variation of the employer-oriented component score within the country between companies is about the same for all countries. Within the Netherlands, Ireland, UK, and Slovenia, there is slightly less variance between companies, while in Latvia, Belgium, France, and Finland, there is slightly more variance. What is more visible is that companies in Southern European countries yet again have lower average scores than the companies in the rest of Europe.

3.2. Company level determinants: Random intercept model

In this section, we examine the various company level characteristics that can explain the use of working time arrangements by European companies. We put a special focus on how much variance company level characteristics can explain, in comparison to what the country level can explain.

From previous studies, we can see that the country a company is located in, the line of business, its size, and who it employs (or tries to recruit), its negotiation structures, workload variation, economic situations, are all important factors in explaining the variation of flexibility options that are used within a company. Of the background information of the company within the ESWT data, the following information was chosen as factors that explain the cross-company variation in the use of flexibility options.

Company level control variables

1) Sector – NACE 13 – reference: Manufacture sector

(Industry: Mining and quarrying, Electricity, gas and water, Construction, Services: Retail and repair, Hotel and restaurants, Transport and storage, Financial intermediation, Real estate, renting and business activities, Public administration, Education, Health and social work, Other social services)

2) Public vs. private sector

3) Company size – 6 categories

(categories: 10 to 19, 20 to 49, 50 to 99, 100 to 199, 200 to 499, 500 or more)

4) Composition – proportion of female workers – 5 categories

“ skilled workers – 5 categories

“ younger workers (younger than 30) – 5 categories

“ older workers (older than 50) – 5 categories

(Categories: Less than 20%, 20% to less than 40%, 40% to less than 60%, 60% to less than 80%, 80% or more)

5) Collective agreement on working time – dummy variable

6) Existence of employee-representative body – dummy variable

7) Workload variation – daily, weekly, seasonally – dummy variable

8) Economic situation of the company – 4 scales

(Very bad, quite bad, quite good, very good)

9) Use of temporary contracts – dummy variable

10) Use of work-life balance facilities – dummy variable

(Here, the facilities include kindergarten and crèche, other professional help for children, professional help for household management, and “other facilities”)

The simplified version of the model is as shown below. Here X_{ij} indicates the company-level explanatory variables, used here as control variables (for more details on the model see chapter 2).

$$y_{ij} = \beta_{0ij} + \sum_p \beta_p X_{pij} \quad \forall p = (1, \dots, P) \quad (2.5 \text{ repeated})$$

$$\beta_{0ij} = \beta_0 + u_{oj} + e_{oij}$$

$$u_{oj} \sim N(0, \sigma_{u0}^2) \quad \forall j = (1, \dots, J)$$

$$e_{oij} \sim N(0, \sigma_{e0}^2) \quad \forall i = (1, \dots, I)$$

Note: i : company-level, j : country-level

y_{ij} = dependent variable, X_p = company level predictors (fixed effects), β_0 = coefficient for constant, β_p = coefficient for company level predictors, u : country-level error, e : company-level error

Explained variance

The variance explained can be examined using the model below, where R_1^2 represents the variance explained for level 1, and R_2^2 represents the variance explained for level 2 (for more on explained variance calculation issues see chapter 2).

$$R_1^2 = \left(\frac{\sigma_{e|b}^2 - \sigma_{e|m}^2}{\sigma_{e|b}^2} \right) \quad (2.14 \text{ repeated})$$

$$R_2^2 = \left(\frac{\sigma_{u0|b}^2 - \sigma_{u0|m}^2}{\sigma_{u0|b}^2} \right) \quad (2.15 \text{ repeated})$$

note: $\sigma_{e|b}^2$ = the company level residual for the baseline model, $\sigma_{e|m}^2$ = the company level residual for the comparison model, $\sigma_{u|b}^2$ = the country level residual for the baseline model, $\sigma_{u|m}^2$ = the country level residual for the comparison

We see that there are several company level characteristics that have strong explanatory powers in explaining working time components. The size of the company

explains 16.5 percent of the variance between companies in their use of employer-oriented WTFC. This is much larger than what the country level explains. Of course, size can be an important factor due to the fact that the probability of having at least one worker work unusual hours, overtime, or shift work, will increase proportionately to the size of the company. For the employee-oriented WTFC, being in the public sector alone explains 5 percent of the total variance, and the composition – thus the proportion of female, skilled, young and older workers - in combination explains 7.6 percent. However, in both cases the variance explained is much less than the variance explained by putting countries into the model.

Including all of the relevant company level characteristics, we arrive at the regression outcome as in Table 4-2. This model does not allow for random slopes, thus does not include the country variance in the effect of the company level characteristics.

Firstly, we can see that a large amount of variance has been explained by the indicators included in the model. In the case of employee-oriented WTFC, the company characteristics included do not decrease the within-country, between-company variance drastically, only about 9 percent. However, the between-country variance is decreased 29 percent. This means that, when we take the compositional effect into account, that is, take into account the fact that countries have companies that are of different observable character such as size and sector, there is a large decrease in the observed differences between countries. Thus, companies act even more similarly across different countries, in regards to the provision of employee-oriented working time arrangements.

Table 4-2: Multilevel, multi-variate regression analysis outcome for working time flexibility practices (ESWT 2004/2005) – random intercept model (Model 1)

	Employee-oriented WTFC		Employer-oriented WTFC	
	B	Std. Error	B	Std. Error
(Constant)	- 0.240***	0.083	- 0.200***	0.079
Mining and quarrying	- 0.120	0.092	0.023	0.087
Electricity, gas and water	- 0.003	0.071	0.177***	0.068
Construction	0.040	0.029	- 0.433***	0.028
Retail and repair	0.030	0.023	0.046**	0.022
Hotel and restaurants	- 0.104**	0.041	0.574***	0.039
Transport and storage	- 0.011	0.035	0.287***	0.034
Financial intermediation	0.292***	0.046	- 0.347***	0.044
Real estate, renting and business activities	0.174***	0.029	- 0.041	0.027
Public administration	0.259***	0.039	- 0.071	0.037
Education	0.341***	0.044	- 0.230***	0.042
Health and social work	0.245***	0.041	0.457***	0.039
Other social services	0.122***	0.047	0.297***	0.044
Public sector	0.097***	0.026	0.032	0.025
Number of employees	0.052***	0.005	0.208***	0.005
Female proportion	0.064***	0.006	0.031***	0.006
Skilled proportion	0.029***	0.005	- 0.032***	0.005
Younger proportion	- 0.003	0.008	0.040***	0.008
Older proportion	0.016	0.009	- 0.006	0.009
Variation within a day	0.002	0.021	0.130***	0.020
Variation within a week	0.052***	0.018	0.089***	0.017
Variation within a year(seasonal)	0.078***	0.015	0.081***	0.014
Economic situation	0.056***	0.012	- 0.010	0.011
Working time agreement	0.052***	0.018	0.101***	0.017
ER body exist	0.077***	0.019	0.165***	0.018
Use of temporary contracts	0.079***	0.019	0.192***	0.018
Work-life balance facilities	0.193***	0.027	0.099***	0.026
N	14461		14461	
-2*loglikelihood	37423.672		35938.965	
Adj. R-square(from OLS fixed-effects model regression)	24%		36%	
Decrease within country variance (from empty model)	9%		28%	
Decreased between country variance (from empty model)	29%		17%	
Modelled variance	12%		12%	
Modelled variance + variance attributed to level 2 (country)	24%		36%	

Note: ** represent those significant at the 95% confidence level, *** at the 99% confidence level
Reference category for sector: manufacturing

For the employer-oriented WTFC, when we take the company characteristics into account, the variance between companies, within countries, decreases 28 percent. Thus, the observed company characteristics listed here can explain quite a substantial amount of differences between companies, within countries, in the way they use employer-oriented working time practices. In addition, taking the compositional effect into account, the between-country variance also decreases 17 percent. This entail that when we take various observable company characteristic differences into account, the differences between countries, in the way their companies use working time practices that facilitate the needs of the company, decreases even more.

We can calculate the total variance explained by the model as the variance explained by the country level and by the company level indicators included. In this case, the country level and the company level variables explain approximately 24 percent of the total variance of the employee-oriented WTFC, and 36 percent for the employer-oriented WTFC. The explained variance is not different from the Adjusted R-square of the OLS model which includes all the company level variables as well as countries as dummy variables.

Company level determinants

Structural variables

As Table 4-2 shows, on average, services sectors provide more working time arrangements for employees compared to industries sectors. Within the industries sectors there seems to be no significant differences between the four different types of sectors distinguished here, and they seem to be providing approximately the same amount of arrangements. Within the services sectors, the Hotel and restaurant sector scores lowest, even lower than the industries sectors. The Retail and repair, and the Transport and storage sectors provide approximately as much employee-oriented working time arrangements as the industries sectors. All other sectors within the service sectors provide more employee-oriented working time arrangements than the industries sectors. Of these, the Education sector, and the Financial intermediation sector seem to score the highest for employee-oriented WTFC.

For employer-oriented WTFC score, there is even more sectoral variation, but there is not as much of a divide between the industries sectors versus the services sectors. Of the industries sectors, the Electricity, gas and water sector use more employer-oriented WTFC than the Manufacturing sector, whereas the Construction sector uses much less. The Mining and quarrying sector is about the same as the Manufacturing sector. Within the services sectors, the Education sector and the Financial intermediation sector scored the highest in employee-oriented WTFC, but use less employer-oriented WTFC than the Manufacturing sector, and scored the lowest within the service sectors. On the other hand, the Hotel and restaurant sector, which of the services sector, provided the least amount of employee-oriented working time arrangements now score highest in the use of employer-oriented working time arrangements of all sectors, both industries and services. The Health and social work sector, another labour intensive sector, also scores high in this respect. Other social services, Transport and storage, and Retail and repair sectors, also use more employer-oriented working time practices than the Manufacturing sector. Whereas, Real-estate, renting and business activities, and Public administration sectors use about the same amount as the Manufacturing sector.

The sectoral differences in the use and provision of working time practices confirms somewhat to our hypothesis set in Table 4-1, in that for employee-oriented WTFC services sectors did indeed provide more arrangements. On the other hand, this was not necessarily the case for employer-oriented arrangements, where there is a large variance with the industries and services sectors. As predicted in our hypothesis, public companies provided more employee-oriented arrangements than private companies. However, there were no differences between private and public sectors in the use of employer-oriented WTFC. The size of the company is positively related to both working time components, and bigger companies provided and use more working time arrangements, which is in accord with our hypothesis.

A higher proportion of females increase the use of working time practices for both accounts. The relationship between female proportions and employee-oriented working time practices confirms our hypothesis, which shows us the use of employee-oriented working time flexibility can be due to the greater demands coming within the

company. On the other hand, it is uncertain why companies with high proportion of female workers use a lot of employer-oriented flexibility. This may have to do with that the high proportion of female workers within the company represents the company being in the secondary market, thus, the companies where more employer-oriented flexibility is used. This may also have to do with that the companies that employ many women may have more employees off on leaves, for care and family responsibility, and thus need other workers to work overtime to compensate for the lost workforce.

The number of skilled workers increases the use of employee-oriented WTFC, while decreasing the use of employer-oriented WTFC. This is perfectly in line with the hypothesis set, that in companies using more skilled workers, for recruitment and other issues, more employee-oriented working time flexibility is provided. Also, as set in the hypothesis, companies where there are less high-skilled workers, thus more low-skilled work force, companies were able to use more employer-oriented working time flexibility. This may be due to less resistance and perhaps due to worker's demand for overtime for additional income. Similarly, our result confirms that the proportion of younger workers in the company increases the use of employer-oriented WTFC. This is also according to our hypothesis, which predicted that the proportion of younger workers will be linked to the use of employer-oriented flexibility, may it be due to their poorer negotiation position or that they are not as prone to sickness and health issues compared to older workers. Contrary to our hypothesis, the proportion of older workers, that is 50 years or older, in the company did not change the use of working time practices, neither for the employee-oriented nor the employer-oriented.

As predicted, the use of working time flexibility was influenced by the workload fluctuation of the company. For employee-oriented WTFC, although short-term variations did not have strong effects, i.e., no effect of workload variation within a day, the longer term variations, i.e., variation within a year and within a week, had positive effects. In addition, workload variation within a year, the longest workload variation measured in the survey, showed a stronger effect. In the case of employer-oriented WTFC, all workload variations had positive effects, however, shorter-term

workload variations, i.e., variation within a day and week, seem to have stronger effects than longer-term ones.

Lastly, of our structural variables, the economic situation of the company seems to positively affect the use of employee-oriented working time arrangements. This correspond to our hypothesis set in section 2 of this chapter, where it was predicted that there is a positive relationship between economic situation of the company and the use of employee-oriented working time practices, for companies in better economic situations have the financial capacity to provide more work-life balance policies. Economic situations and the use of employer-oriented working time practices are negatively correlated, but this relationship is not statistically significant. The relationships found between working time practices and economic situations may also have to do with reverse causality, where the use of the different types of working time practices result in different economic situations for the company. This issue and other implications of the use of working time flexibility are elaborated further in chapter 6 of this study.

Agency variables

All of the agency variables, that is, the existence of a working time agreement and employee-representative body, the use of temporary contracts and work-life balance facilities, were positively related both types of working time components.

For the relationship between employee-oriented working time practices and the existence of employee-representatives, this confirms our hypothesis that due to either the strength of the union or possibility for workers to voice their demands companies with employee-representatives have more employee-oriented arrangements. On the other hand, the existence of employee-representatives being positively related to the use of employer-oriented working time practices is contrary to our hypothesis. However, this result may have to do with the fact that having an employee-representative body enables companies to introduce the use of employer-oriented working time arrangements formally, through negotiations with the employee-representative body. This argument corresponds to the result found for the

relationship between the existence of a collective agreement on working time with the use of working time practices.

For both working time components, the existence of a collective agreement on working time seems to have a positive effect. As noted in the hypothesis, this may have to do with the fact that the collective agreements acts as a platform where both employers and employees can introduce their demands to the other partner. On the other hand, this may have to do with a reverse causality, where the extensive use of working time arrangements lead the partners to draw up an agreement on working time, to formalize the arrangements that are already in use.

Companies using temporary contracts are likely to use more working time flexibility both employee-oriented, and employer-oriented. For the former, as mentioned in the hypothesis, this may be because companies use temporary workers to fill in the gap of workers taking leaves, a part of employee-oriented working time component. For the latter, this indicates a sort of complementary relationship between internal and external flexibility, where companies that use flexibility use it both internally and externally, not one or the other. This is in line with the findings of Cappelli and Neumark (2004), who find that internal flexibility and external flexibility are not necessarily used as alternatives. This line of argument is against the core-periphery argument of Atkinson (1984).

Lastly, we find that the use of work-life balance facilities, that is, services and physical facilities provided by the firms to help workers balance work and life, is positively related to the use of working time components both for employees and employers. The former relationship represents a complementary relationship between working time arrangements and services that support work life balance of workers. Thus, companies that provide work-life balance policies, provide both types of policies not one or the other. The latter relationship complies with our hypothesis, where it was predicted that companies using work-life balance facilities will also use employer-oriented flexibility arrangements, due to the high cost of labour. In these companies, employers use working time flexibility rather hiring new employees in times of high production demands.

Of the various agency variables, it is likely that the use of temporary workers and work-life balance facilities is a part of the HR management policy the company uses, thus companies use these policies in combination as a part of the total HR management strategy (also see Chung et al., 2007). On the other hand, the relationships found for the existence of an employee-representative and collective bargaining on working time with the use of working time components, could be used to facilitate development of working time flexibility. This point will be discussed further in the conclusion section of this chapter.

Differences in effects for the flexibility types

As we see, although there are many company characteristics that impact the use of employee- and employer-oriented working time components in similar manners, such as the case for all of the agency variables, some company characteristics will have different impact depending on the type of working time component in question. Many sectors showed different patterns in their average employee- and employer-oriented working time component scores, where one could find sectors with an above average score of one component, while having below average score of another. Workforce composition also had different implications on the two types of working time components. Although having large proportion of skilled workers increased the use of employee-oriented WTFC, it decreased the use of employer-oriented WTFC. Having large proportion of younger workers under the age of 30 had no effect on the use of employee-oriented WTFC, however, increased the use of employer-oriented WTFC. Lastly, workload variation also had different impacts on the two WTFCs, where longer-term fluctuations had larger impacts on the employee-oriented WTFC than shorter-term fluctuations, shorter-term fluctuation were more important on the use of employer-oriented WTFC than longer ones. This difference in the relationships found shows us how the two working time components are being used in companies with different characteristics, and probably for different purposes.

3.3. Cross-national variance of company level determinants: Random slope models

Model

In this section, we examine how some of the effects company level variables have on the use of working time practices or component scores are different across countries. Here we focus on factors such as, being a public company, having a collective agreement on working time, and the existence of an employee-representative within the establishment. The simplified version of the model is as shown below, when we allow for one company level variable, represented here as X_1 , to have random slope (for more see chapter 2). In this model, we use the significance level of 99 percent confidence level or above. As explained in section 3 of chapter 2, due to our small sample size at level 2, we have to assume that there may have been a downward bias in our variance error term. Thus, to take this into consideration, we have chosen the highest confidence level, to be certain about the validity of the cross-country variances.

$$y_{ij} = \beta_{0ij} + \beta_{1j}X_{1ij} + \sum_p \beta_p X_{pij} \quad \forall p = (2, \dots, P)$$

$$\beta_{0ij} = \beta_0 + u_{0j} + e_{0ij} \quad (2.7 \text{ repeated})$$

$$\beta_{1j} = \beta_1 + u_{1j}$$

$$\begin{bmatrix} u_{0j} \\ u_{1j} \end{bmatrix} \sim N \left(0, \begin{bmatrix} \sigma_{u0}^2 & \\ \sigma_{u01} & \sigma_{u1}^2 \end{bmatrix} \right) \quad \forall j = (1, \dots, J)$$

$$e_{0ij} \sim N(0, \sigma_{e0}^2) \quad \forall i = (1, \dots, I)$$

Note: i : company-level, j : country-level

y_{ij} = dependent variable, X_1 = variable allowed to vary across country (random effects), X_p = other company level predictors (fixed effects), β_0 = coefficient for constant, β_1 = coefficient for company level variable allowed to vary across countries, β_p = coefficient for company level predictors, u : country-level error, e : company-level error

In the case of employee-oriented WTFC, when we examine the cross-national variance of the effect of the three variables separately, we find cross-national variance in the effect of being a public sector and the existence of an employee-representative

within the company. The use of collective agreement on working time also shows a bit of variance, but this variance is not at a sufficiently high significant level.

Table 4-3: Multilevel, multi-variate regression analysis outcome for working time flexibility practices (ESWT 2004/2005) – random slope model

	WTFC for employees		WTFC for employers	
	B	Std. Error	B	Std. Error
(Constant)	- 0.236***	0.083	- 0.199***	0.079
Mining and quarrying	- 0.114	0.092	0.037	0.087
Electricity, gas and water	0.011	0.071	0.165***	0.068
Construction	0.039	0.029	- 0.438***	0.028
Retail, repair	0.031	0.023	0.045**	0.022
Hotel and restaurants	- 0.099**	0.041	0.575***	0.039
Transport, storage	- 0.012	0.035	0.275***	0.034
Financial intermediation	0.299***	0.046	- 0.347***	0.044
Real estate, renting and business activities	0.178***	0.028	- 0.046	0.027
Public administration	0.256***	0.041	- 0.114***	0.039
Education	0.360***	0.045	- 0.226***	0.042
Health and social work	0.225***	0.042	0.445***	0.040
Other social services	0.129***	0.047	0.286***	0.044
Public sector	(R)0.069	0.054	(R)0.040	0.042
Number of employees	0.048***	0.005	0.206***	0.005
Female proportion	0.063***	0.006	0.031***	0.006
Skilled proportion	0.029***	0.005	- 0.031***	0.005
Younger proportion	- 0.004	0.008	0.041***	0.008
Older proportion	0.016	0.009	- 0.008	0.009
Variation within a day	0.000	0.021	0.128***	0.020
Variation within a week	0.055***	0.018	0.091***	0.017
Variation within a year(seasonal)	0.076***	0.015	0.081***	0.014
Economic situation	0.052***	0.012	- 0.011	0.011
Working time agreement	0.053***	0.018	0.102***	0.017
ER body exist	0.090***	0.019	0.170***	0.018
Use of temporary contracts	0.081***	0.019	0.194***	0.018
Work-life balance facilities	0.196***	0.027	0.101***	0.026
N	14461		14461	
-2*loglikelihood	37334.367		35888.289	

Note: ** represent those significant at the 95% confidence level, *** at the 99% confidence level

Reference category for sector: manufacturing

(R) represents that the coefficient for the variable is allowed to vary across different groups of level 2(country)

However, the impact of the existence of an employee-representative body ceases to have cross-country variance, when the effect of being a public company is allowed to vary across countries. In other words, although one can find cross-national variance in the effect of having an employee-representative body in the use of employee-oriented working time practices, it is likely that this is actually due to the cross-national variance in the effect of being a public establishment. Thus, the cross-national variance found of the effects of the existence of employee-representative body is actually representing the cross-national effects of public companies. For the employer-oriented WTFC, even when taken separately, only the effect of being a public company has significant cross-national variances. For this reason, in the model explaining employee-oriented working time components, as well as the model explaining employer-oriented working time components, we only allow the effect of being a public company to have cross-nationally varying impacts.

In the model for employee-oriented WTFC, when allowed to vary across countries, the European average effect of being a public company on the score of employee-oriented WTFC loses its statistical significance, although remaining positive. In the model for employer-oriented WTFC, when we allow for the effect of being a public company to vary across countries, there are two changes. Firstly, the negative effect of being a company within the public administration sector becomes larger thus becoming statistically significant. In addition, the effect of being within the public sector also becomes larger, although the average for all European countries is still insignificant (See Table 4-3).

Cross-national variance in averages and the effect of being a public company

In this section, we examine the cross-national variance in the national averages of the two types of WTFC scores, as well as the cross-national variance found for the effect of being a public company.

Firstly, we examine the variances of the national average scores of the two types of WTFC scores. These scores are not the just the national averages but scores

having taken various company characteristics into consideration, thus is different from what is found in Table 3-7 of Chapter 3. The scores are represented in Figures 4-6 and 4-7. The scores represented here are those when we control for all the observable company characteristics. Thus our representative “average” company is in the manufacturing sector, is a private company, has 50 to 99 workers, where 40 to 60% of its workers are female, 40 to 60% are skilled, 40 to 60% are younger than 30, 40 to 60% are older than 50. This company does not have a collective agreement on working time, nor an employee-representative, no workload variation, in a “quite bad” economic situation, do not use any temporary contracts, or work-life balance facilities. In addition, the effect of being a public company is allowed to vary across countries (more on the reference company see chapter 2).

As we can see from Figures 4-6 and 4-7, there are large cross-national variances in the WTFC scores of companies. For the employee-oriented WTFC, it is the Northern European countries, that is, Finland, Denmark, and Sweden, along with the Netherlands and Poland, who have companies that provide diverse employee-oriented working time arrangements, and is statistically significantly different from the European average score. On the other hand, it is the southern European companies, that is, Cyprus, Greece, Spain, Portugal, Italy, along with Luxembourg and Austria, with the least employee-oriented working time practices, and has statistically lower scores than the European average for employee-oriented WTFC scores. With the exception of the two country grouping of the Nordic and Southern European countries, we cannot find a clear distinction of the grouping that reflects the previous studies of welfare state regimes, which is similar to the conclusions arrived for the country cluster outcome in chapter 3.

For the employer-oriented working time practices, there is even less of a clear country grouping (see Figure 4-7). UK, Germany, Austria, Sweden, Belgium, Latvia, Czech Republic, Ireland, Netherlands, and France, are all countries whose country scores are higher than the European average employer-oriented WTFC scores. However, southern European countries, thus, Portugal, Greece, Cyprus, Spain, Italy, along with Hungary and Slovenia, are grouped at the lower end with below average scores on the use of employer-oriented WTFC.

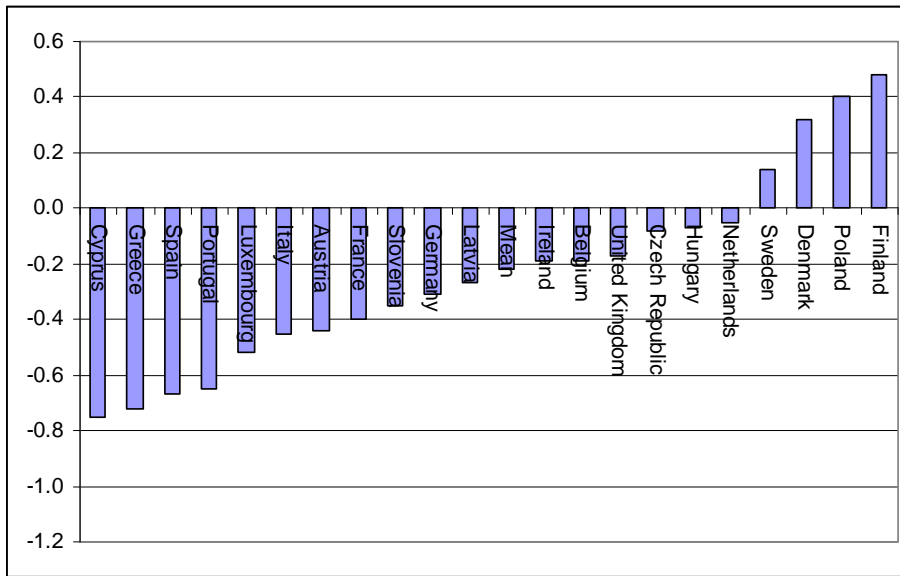


Figure 4-6. The national averages for employee-oriented WTFC scores

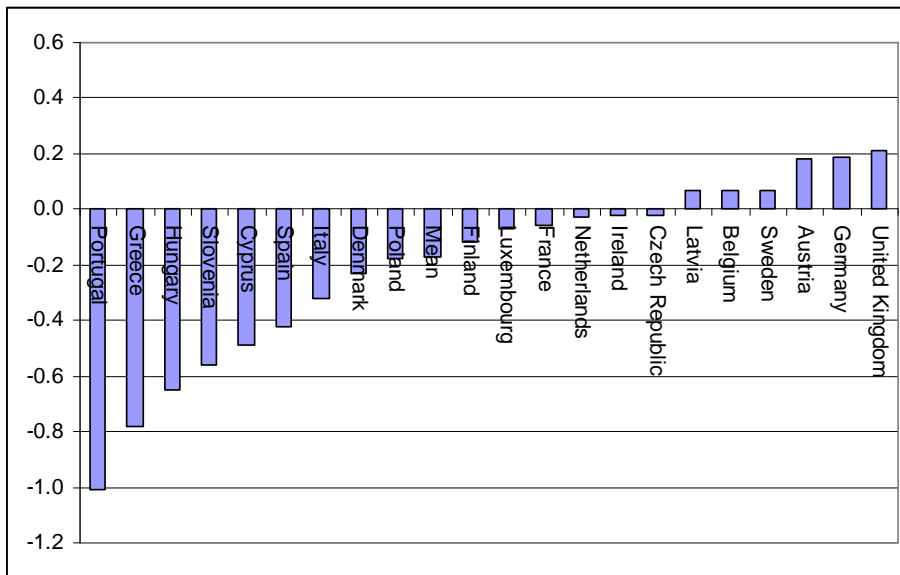


Figure 4-7. The national averages for employer-oriented WTFC scores

Figure 4-8 depicts the cross-national variation on the effect of being a public company on the use of employee-oriented working time arrangements. Here we can see large cross-national variations, where in some countries public companies provide more

employee-oriented arrangements, while in other countries private companies provide more. In closer inspection, we can see that in the new accession countries, that is, Latvia, Poland, Czech Republic, Slovenia, and Hungary, as well as some of the Southern European countries, that is, Greece, Cyprus, Portugal, and Italy, private companies seem to provide more employee-oriented working time arrangements to its employees, or there seem to be no distinction between public and private companies. This outcome implies that in the new accession countries and in some southern European countries, private companies may actually be the forerunners in providing workers with better work-life balance options. On the other hand, in most of the old EU-10 countries, public sectors do seem to provide more employee-oriented working time arrangements, as predicted in the hypothesis. The difference between the public, private sectors seem to be more prominent in the continental European countries such as Germany, France, the Netherlands, Luxembourg, and Belgium, but, this effect can also be found in countries such as Ireland, Spain, and Denmark.

We can also find a cross-national variation in the effect of being a public company on the use of various employer-oriented working time arrangements (Figure 4-9). Although for the European average, there is no significant difference between public and private companies in their use of employer-oriented arrangements, this relationship varies largely across different countries. However, this variation is somewhat smaller than what is found in the case for employee-oriented WTFC. In countries such as Italy, France, and Finland, the effect of being a public company is significantly different from the European average, showing a positive effect. In these countries, public companies are likely to use more employer-oriented working time arrangements than private companies, after taken other company level characteristics into account. This result is opposite to what was predicted in our hypothesis. On the other hand, Spain, UK, and the Netherlands, show a significant difference from the European average by showing a negative relationship between being a public company and using employer-oriented WTFC. Thus, in these countries public companies are less likely to use employer-oriented working time arrangements than in private companies. This result confirms what was predicted in our hypothesis.

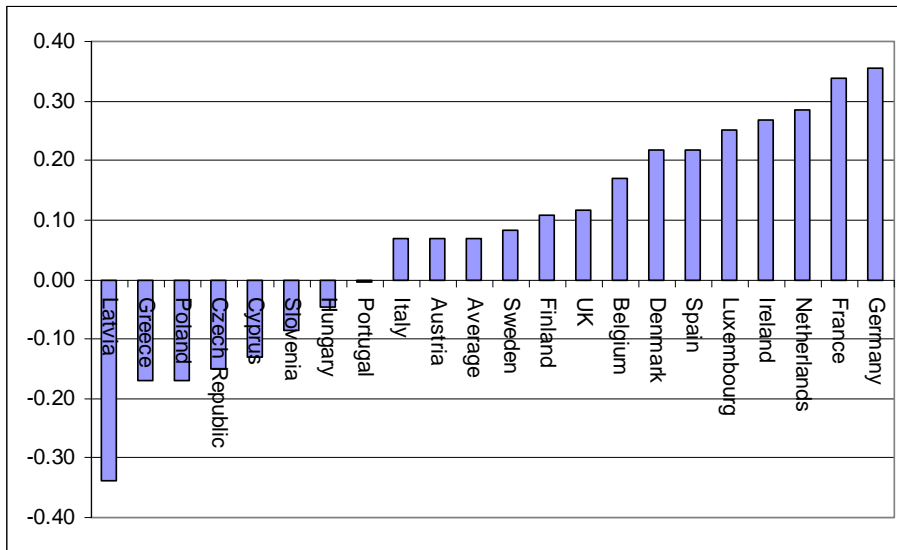


Figure 4-8. The effect of being a public company on the use of employee-oriented WTFC

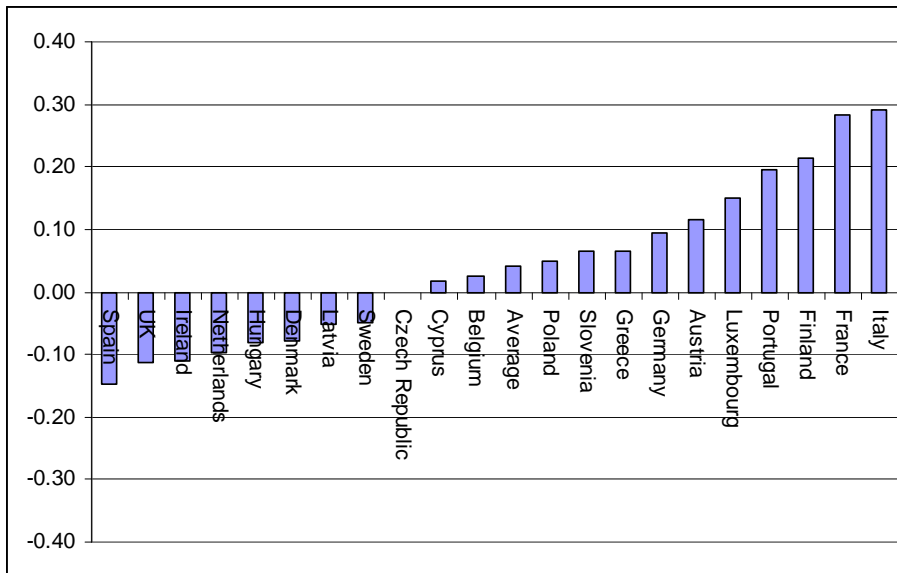


Figure 4-9. The effect of being a public company on the use of employer-oriented WTFC

3.4. Summary

From the analyses examined this section, we can see that countries are not as strong of a determinant of explaining the variance between companies in their practices of working time. It can explain at most less than 1/5 of the total variance found between companies across European countries. Taking the composition effect into account, thus taking into consideration the fact that every country has companies with different characteristics, the differences between countries decrease even more. Thus, there are large variances between companies within countries in regards to practices of working time flexibility. Companies act rather autonomously to adapt to their specific situations. For this reason, we cannot rely on country level aggregate scores to examine what is truly happening in regards to labour market flexibility, since the variation within countries too large. We can also see that this variance within countries is different for each country, where in some countries companies act rather similarly in regards to the provision of working time arrangements, in others they vary to a larger extent. The variance found between companies within countries is larger for the case of employer-oriented working time practices, whereas the variance between countries is larger for the case of employee-oriented working time practices.

We can see that various observed company characteristics explain for a large part of the variance found between companies in the use and the provision of working time arrangements. We can divide them into structural and agency variables. We find that many of the structural characteristics of the company, that is, sector, size, workforce composition, workload variation, and economic situations, do impact the use of working time practices quite significantly. In addition, all the agency variables observed in the model, that is, use of a collective agreement on working time, existence of an employee-representative body, use of temporary contract, use of work-life balance facilities, showed positive significant impacts on both working time components. Although some variables have the same impact on both the employee-oriented and employer-oriented working time components, some variables, such as work force composition and workload variation, as well as sectoral differences, have different if not opposite impacts on the two types of working time components.

Lastly we find that there are cross-national variance not only in the average scores for the two working time flexibility component scores, but also the way being a public company affects these scores. In other words, being a public company may lower or higher the company's working time component score, may it be employer-oriented or employee-oriented, depending on which country the company is in. We can find some country groupings in the average WTFC scores as well as the way being a public company affects these scores. For average scores of employee-oriented WTFC, we can see a distinction between the northern European countries with the southern European countries, and the rest of the 21 countries included. On the other hand, for the employer-oriented WTFC, the only distinguishable country grouping is the southern European countries with a lower average score than the rest of Europe. For the effect of being of a public company on the employee-oriented WTFC, there seems to be a distinction between the new accession countries and some of the southern European countries, with the old EU-10 countries. This distinction cannot be found in the case for employer-oriented WTFC, where no specific country grouping was found. These results act as a strong critique on the general theories, which apply theories to all countries without clear verifications. As we have seen, although one can think that the average relationship found for Europe is what can be seen in all countries, this is not necessarily true, and different factors have different impacts in different countries.

4. Conclusions

This chapter addresses the question do countries matter in explaining the differences between the practices of flexibility of companies across Europe, distinguishing flexibility practices that are used to facilitate needs of employees and the needs of employers. The clear cut answer to this question is *yes it does*. This is more the case for the working time arrangements used to balance employees' work and life needs, and less so for the options companies take up to adapt to business cycles or other production needs. This country dependence seems to also differ between different countries, where in some countries one can find more variance between companies than in others. If we control for other relevant factors, that may affect the practices of

working time, we can see a decrease in the variance between countries in the use and provision of flexibility options. In addition, there are some company level characteristics, which explain for the variance of the use and provision of working time practices, whose effects are country dependent. In other words, some characteristics which contribute in explaining the use of working time arrangements of companies have different implications in different countries. The most important of these is the effect of being a public company. In some countries public companies provide or use more working time arrangements, whereas in other countries this is not the case. This relationship seems to also differ depending on the working time practice in question. For the employee-oriented working time practices, we can find a division with the old EU 10 and the new accession and southern European countries. In the latter group of countries, being within the public sector decreased the numbers of working time arrangements provided within the company that were beneficial for workers' work-life balance. On the other hand for most EU 10 countries, public sectors did indeed provided more flexibility options for workers. This outcome implies that in the transition economies, private companies may be the forerunners in providing work-life balance arrangements, which is contrary what is argued in previous studies.

Having said how countries can explain the practices of companies and the effect certain factors can have on these practices, we must not forget that there is still a large amount of variance between companies within countries. What this implies is that we are dealing with a large variety of company types even within the same country, with same institutions and environment. For this reason, to examine flexibility practices properly, it is insufficient to examine aggregated macro level indicators alone. Micro level analyses, which examine the behaviours of companies and individuals must be done, for this is where the state of being flexible actually takes place (Chung and Wilthagen, 2008). In addition, we must be aware of studies that use country averages to depict the situation of a country, for this average score may not depict what is truly happening within countries regarding flexibility practices.

Policy makers must also bear in mind that there cannot be uniform flexibility or flexicurity policies, not for all of Europe but also not for all companies within each country. As the needs of the companies and individuals vary, their adaptation method and their capacities to address these needs will also vary, resulting in very different outcomes of flexibility practices. In addition, the same strategy measure will have diverse outcomes in promoting or suppressing flexibility practices, based on the country it is implemented in.

The results of this study provide grounds why one should be cautious in concluding with a general theory for all European countries. As we have seen for the case of the impact of being a public company, and to some extent the impact of having an employee-representative, there are cross-national variances in the impact these company characteristics have on the use of working time arrangements. Thus, we cannot conclude with a European average theory, but have to make sure to see if there are diversities in these relationships within Europe.

There are still some remaining questions that can be investigated further. One aspect concerns whether if there are any other company level characteristics that have cross-nationally varying impacts on working time practices. In this chapter, we have focused on the institutional related factors, however, we can think of other factors that may have different impacts, such as cross-national variance of the impact of being in an industry or services sector. In addition, it may be worthwhile to see if there are any company level characteristics that have different impacts depending on which sector it is in. As there are cross-country variances in the impacts of company level characteristics, there can be cross-sectoral variances in these impacts.

The outcomes of this study are limited in the sense that it only accounts for the use of various options, not accounting for the extent to which the options are used or the scope of workers the arrangements cover. We may arrive at different results when we take the extent to which the arrangements are used into account, for it may be that some companies may use one arrangement more extensively and than using several types of flexibility options. The way options are used can also be a topic of further research (see discussion in chapter 2 of this study).

Lastly, there is the question of why countries have these differences, even if these differences may not be as large as one expects. In this chapter we have examined the observable company characteristics that can explain for companies' working time practices, but the question remains of what observable country characteristics can explain for the cross-national variance left? This question will be investigated further in the next chapter.

Chapter V. Do institutions matter? Country determinants of working time practices

1. Introduction

In the previous chapter, we find that companies act rather autonomously in their flexibility behaviour. Despite this, companies are also not completely independent of the influences from the country level. There are still substantial amounts of variance that can be accounted for by the country level. Then what can account for this cross-national variance? The main purpose of this chapter is to find out what country characteristics can explain for the country variances in the practices of working time flexibility, especially focusing on the roles institutions play. Institutions are of key interest in our study due to the fact that they have been regarded as the main reasons why some countries lag behind in the development of labour market flexibility, as well as because they could potentially be changed through policy reforms.

There are many studies that aim at investigating the determinants of the differences in the flexibility practices found across countries (for example, Salvanes, 1997; Regini, 2000; CEC, 2006a; CEC, 2007b; Muffels et al., 2008). Much literature focus on labour market institutions, asserting that they are the determinant factors of why some countries are flexible while others are not. For example, Salvanes (1997) notes that technological change and institutions, such as employment protection legislation and centralization of wage bargaining, account for the differences in labour market dynamics between countries. Many other studies, especially in the fields of institutional economics, examine national labour market institutions not only as the factors that drive flexibility behaviour within a country, but as proxies to indicate the flexibility of the country (for example, Layard et al., 1991; Scarpetta, 1996; Nickell, 1997; Elmshov et al., 1998). Other scholars turn to explanations such as socio-economic structures and pressures, and cultural changes, both in society and in production (Atkinson, 1987; Brewster et al., 1997; Mishra, 1999; Standing, 1999; Evans, 2002). These explanations of country differences are key issues that need to be addressed, to develop policies or to create environments that facilitate the use of

flexibility practices with positive outcomes, and restrict those with negative effects. This chapter is an addition to this ongoing discussion and aims to provide explanations of the variation found across countries in respects to company level flexibility practices, focusing on working time flexibility, asking if institutions do matter.

In this chapter, a multilevel model is used to tackle this question (more on multilevel modelling can be found in chapter 2 of this study). Through the use of a multilevel model, one can find the pure country difference, that is, the differences between countries when other characteristics of companies such as sector, size, composition of its workforce and others, are controlled for. In other words, the model explains the variation in working time flexibility practices of European companies, when it is presumed that all other characteristics of the company are equal, and the only difference is that they are located in different countries.

This chapter is structured as follows. In the next section (section 2) some competing theories on cross-national variations in labour market flexibility are examined to arrive at the hypotheses. In addition, operationalisation of the country level determinant factors is done in this section. The outcomes of the multilevel regression analyses follow in section 3. Lastly (section 4) some conclusions, policy implications and issues for further research will be put forward.

2. Country differences in labour market flexibility

The variance in company behaviour explained by the country level can result from numerous factors. This can include institutional environments, such as law and labour market policies, industrial relations related aspects, labour market and economic market situations, business cycles and structures, as well as various cultural aspects such as the gender division of work, and the general societal attitude towards work-life balance issues. Unfortunately, there are no specific lists of factors researchers in the field of sociology or social policy agree on as the major influential factors. The list of influential country level factors, used in the field of labour economics and

institutional economics, focuses on labour market institution effects on labour market and economic performances (for example, Layard et al., 1991; Scarpetta 1996; Nickell, 1997; Elmshov et al., 1998). These institutions include employment protection legislation, union strength, bargaining coordination and centralization, tax wedges, unemployment benefit scheme generosity, active labour market policy, etc. However, not all of the institutions listed are relevant for this chapter, due to differences in what we want to explain. For this reason, only some of the relevant institutional factors from the previous studies will be used for the purpose of this chapter, as well as additional factors from other major studies from the studies in fields such as industrial relations, sociology, and social policy, on country differences in flexibility, more specifically in working time flexibility.

In this section, we examine the key literature on the cross-national variance of labour market flexibility and working time flexibility, to arrive at key hypotheses of what can explain for the variance of working time practices across European companies. In addition to our main hypothesis, that national institutions are the most influential factor in explaining for country differences, we also derive sub-hypotheses on the effect various country characteristics can have, in explaining companies' working time practices across countries. Here, we divide the theories into those concerning labour market institutions, labour and economic situations and structures, and lastly the gender regime, which is taken as a measurement of the influence of culture.

2.1. Labour market institutions

Labour market regulation

Regulation on labour markets, such as employment protection legislations, and working time regulations, affects the practices of flexibility at the company level by allowing or restricting, as well as, enforcing and encouraging the use of certain arrangements through law or policies. Kalleberg (2001) argues that the likelihood of organisations using numerical flexibility strategies depends on the country's regulatory regime. Examples in several countries have shown that establishments

adopt numerical flexibility strategies as a response to economic pressures in countries where national institutions involve few restrictions on managerial decisions (Smith et al., 1995; Toharia and Malo, 2000; Kalleberg, 2001). However, other studies suggest the contrary. Based on the cross-national comparison study of Australia and New Zealand, Allan et al. (1998) show that, despite the substantial difference in the system of labour regulations between the two countries, there were only minor differences in working time arrangements. This outcome suggests that systems of labour regulations may not be a critical factor in determining the use of particular working time arrangements. Brewster et al. (1994) also found that, despite the fact that the country the company is located in, is a strong determinant in the use of flexible arrangements of companies, there is little correlation between legal regulation and the movement towards flexibility. They argue that within each set of national laws, there are differences in the way different sectors and different organisations use flexibility. This, they note, could perhaps be explained through organisational cultures, experiences, and expectations (Horrell and Rubery, 1991; Brewster et al., 1994: 190)

There are several ways in which labour market regulations can affect the flexibility practices of companies. The effects of regulations on the external numerical flexibility and those on working time arrangements can be distinguished. With regards to regulation of external flexibilities, there can be substitution or complementary effects (Kalleberg, 2001; Cappelli and Neumark, 2004). In countries where numerical flexibility cannot be achieved through easy firing and hiring of workers, based on deregulated institutions, one can expect that companies may meet their need to increase flexibility through the use of flexible working hours, i.e., through working time flexibility. In these countries, we expect a substitution effect between regulations on firing, hiring workers, and the use of working time practices. That is, in countries where there is stringent employment protection regulation, especially for regular workers, there may be a need to use working time flexibility arrangements, especially those that facilitate employers' needs. However, when it is taken into account that companies also use temporary contracts as substitutes in cases where the costs of firing workers are high, the relationship between employment protection legislation and working time flexibility becomes more complicated. On the other hand, the opposite effect can be expected, where flexible countries are more flexible in all

respects, externally and internally. This implies a complementary relationship between regulations on firing workers and the use of various working time arrangements.

In addition, we must take into consideration, the effects of regulations that are directly targeted on working time issues. If there are more stringent rules on working time within a country, for example, the definition and the restriction of the use of overtime and unusual hours, one can predict that companies will be unable to use flexible arrangements as much. If there is legal regulation on the provision of leave schemes and workers' right for flexible working hours to fit work with other responsibilities, one can expect companies to provide more arrangements for workers' work-life balance needs due to compulsory nature of these regulations. Even in countries where there is not much state regulation, employers will still be involved in providing for workers' work-life balance (Evans, 2001; Den Dulk et al., 2005). However, in these cases there may be more variance within the country.

Labour relations aspects

Union strength

Unions can be against the use of flexible arrangements for companies' needs, due to their negative impact on the working conditions of workers, and also because they are destructive to industrial relations through their effect on the segmentation of workers (Delsen, 1995: 96). Since union membership is usually centred on permanent full-time workers, and flexible workers have different behavioural patterns and attitudes, a rise in atypical jobs may result in a decline in union membership (Delsen, 1995). In addition, flexible workers can be seen as competitors to unionized workers (Kalleberg et al., 2003). Historically, unions have been against long-working hours and overtime (Pillenger, 2006; EIROonline, 1999; EIROonline, 2004) as well as irregular hours or unhealthy working time patterns such as nights shifts (Pillenger, 2006).

One can expect stronger unions to limit the development of flexible work contracts, as well as, the use of various working time arrangements that are detrimental to the working conditions of workers. Similarly, employers might be able

to introduce flexible contracts and flexible working arrangements that better meet the needs of the company if the bargaining power of unions is weak. Deyo (1997) shows that, where union power and thus the opposition against unfavourable flexibility is weak, countries were able to adopt numerical flexibility strategies to reduce short-term costs (Deyo, 1997; Kalleberg, 2001). Low union membership within establishments has also been linked to a higher use of part-time work and temporary workers (Abraham, 1990; Houseman, 2001). The causality of this relationship can go both ways. In establishments and, over all in countries where union density is low and union power is weak, the expansion of the use of employer-oriented arrangements may increase more easily. However, it may also be that since, in many cases, workers on atypical contracts are not unionized, this may decrease union membership. Kalleberg et al. (2003) argue that the use of flexible staffing arrangements hampers unionizing efforts but the presence of unions also dissuades employers from utilizing these arrangements (Kalleberg et al., 2003: 547). There can also be dilemmas inside unions regarding the use of non-standard work arrangements, since they can be used as buffers to protect regular workers from lay-off (Oslen, 2005). In this case, union membership and use of employer-oriented arrangements will coincide.

By contrast, companies in countries with strong unions may provide more work-life balance arrangements. Despite the fact that unions are against the expansions of flexibility which are detrimental to workers, they note the importance of working time flexibility in balancing work and life for workers. The ETUC (European Trade Union Congress) has been actively arguing for flexible working hours to help workers combine work with other responsibilities and interests (for example see Pillenger for the ETUC, 2006). Also, in their response to the European Commission's Green Paper on modernizing labour law (CEC, 2006b), the ETUC also emphasizes the importance of the development of working time flexibility, instead of just implementing external flexibility (ETUC, 2007a; ETUC, 2007b). This movement is also found in the individual member states as well. In its report on working time, the TUC (Trade Union Congress) of the UK, has also argued that flexible working should be extended to all workers through stronger regulations (Fagen et al. for TUC, 2006). Union membership has been linked with access to more flexible working time arrangements. The TUC (2005), based on the UK Labour Force Survey Micro data,

shows how union members are almost twice as likely to have flexible working time arrangements to facilitate their work-life balance than non-members. Based on such outcomes, we can expect countries with high union memberships to have more work-life balance arrangements available in their establishments on average.

Although many of these studies have examined the effect of unionization and union strength in the establishment level, we believe that the same logic can be used for the country level. Thus, in countries with stronger unions, in general the introduction of employer-oriented flexibility arrangements would have been limited, and introduction of employee-oriented flexibility arrangements would be facilitated. In addition, because we do not have the information of union strength in the establishment level in the ESWT survey, we cannot test for the establishment level relationship between union strength and use of working time practices. Thus the examining this relationship in the country level is worthwhile.

Negotiation structure: Centralization of bargaining

Centralization of bargaining can be related to the ability of workers and employers to advance their interests. From the structural asymmetry in the labour market due to the control over the means of productions, by default, employers have many more ways of promoting their interests than workers (Offe, 1985; Traxler, 2003). This is the reason behind the class-specific preferences between individual (unorganised) and collective (organised) bargaining. Employers will prefer individual unorganised negotiations, whereas workers will prefer organised collective negotiation to increase their strategic capacities against one another (Traxler, 1995; 2003). However, it has also been argued that a more centralized and coordinated bargaining system can deal with negative externalities of the market by internalizing these costs, compared to a decentralized, uncoordinated system. When wage bargaining is centralized and many workers and companies are covered by the bargaining outcomes, it is less clear who will benefit from and be harmed by the consequences of various bargaining outcomes (OECD, 1997: 65). In addition, compared to single employer bargaining, multi-employer bargaining tends to take bargaining out of the competition (Traxler et al., 2001; Traxler, 2003). This means that the centralization of negotiation has effects on the regulation or agreements on working time flexibility, thus indirectly affecting the

use of flexibility arrangements. Flexicurity countries like the Netherlands and Denmark, are examples of countries that have highly coordinated social partners with relatively coordinated centralized bargaining systems, which have introduced various flexibility measures in the labour market to tackle the problem of unemployment (See Visser and Hemerijck, 1997; Madsen, 2003, 2004; Wilthagen and Tros, 2004). Similarly, Traxler argues that, in the era of internationalization, only multi-employer, i.e., centralized bargaining, can enable social partners to negotiate basic compromises within the framework of an organised industrial relations system (Traxler, 2003: 145).

Negotiation structures have also been connected to the working time patterns of the country (O'Reilly and Spee, 1998; Anxo and O'Reilly, 2000; O'Reilly, 2003; Bredgaard and Tros, 2008). Anxo and O'Reilly (2000) derive statist, negotiated, and externally constrained working time regimes, depending on the negotiation structures of the countries. In the statist working time regime, statutory regulations are the key element governing the use of flexibility and working time patterns, and collective bargaining has a limited role. These countries have a more normalized type of working hours. Example countries are Spain and France. Negotiated working time regime typologies emerge where there is a strong tradition of negotiation between social partners, and the state regulatory system only provides a basic framework. Examples of this system are Sweden, Finland, Denmark, Germany, Austria, and the Netherlands. Lastly, an externally constrained working time regime is one where there is free collective bargaining, and working time is distributed over a wider spectrum. Examples are Ireland and the UK (Anxo and O'Reilly, 2000). The theory Anxo and O'Reilly (2000) puts forward concerns the cross-national variance in the distribution of working hours, not necessarily the use of various working time flexibility arrangements. However, one can expect similar effects of negotiation structures on the use of working time arrangements. For instance, companies in countries free collective bargaining will probably have more leeway to make use of flexible working time arrangements. On the other hand, in statist working time regime, statutory regulations may restrict the use of flexible arrangements, especially for the employer's need, but, provide legal obligations for companies in providing worker's work-life balance arrangements. Empirically, Bredgaard and Tros (2008) find that decentralisation is an important precondition for companies in taking up flexicurity

policies. In workplaces where actors at company or workplace level are the main initiators of the introduction of arrangements, more arrangements are used than in workplaces where the national level actors, such as the government, are the main initiators. Based on this, we can predict that, if the bargaining level is at the decentralized level, companies will use more working time arrangements, especially for employer's needs but this may not be the case for arrangements for employer's needs.

2.2. Economic and labour market situation and structures

Labour market situation

The labour market situations of a country can also affect what types of arrangements companies take up in terms of flexibility. When labour market situations are favourable for workers, such as when labour demand is high while there is not enough supply, companies may have to introduce more work-life balance arrangements to recruit and retain their workforce. When the labour market situation is favourable for employers, thus when a country has high unemployment, workers can be pressured into taking up various employer-oriented working time arrangements. In both cases, the labour market situation affects the bargaining positions of both workers and employers and thus indirectly affects the use of working time flexibility. Houseman (2001), using a US-based study on establishments' take up of flexible staffing arrangements, such as part-time work and temporary employment, found that employers are more likely to employ workers in flexible arrangements when labour market demand is low. In addition, workers prefer regular arrangements and are less likely to accept flexible arrangements when the market supply is low (Houseman, 2001:163). However, there is also evidence that labour shortages may drive companies to use more flexible working time arrangements to adapt the workforce to the economic situation. For example, in Denmark, to counter labour shortages, companies use of flexible working time arrangements that allow for extension of working hours (EIROonline, 2006).

Economic situation

When the economy is in a strain, this may increase competition between companies and increase pressures to take up adaptability methods such as employer-oriented flexibility options. However, during economic upswings companies may have more work load due to the increased demand in goods and services increasing the need to use overtime and unusual hours. This is similar to the example of Denmark we mentioned in the previous section, and this positive effect of economic upswing on use of working time flexibility, especially overtime, can be expected to be stronger when the labour market supply is low. However, this economic downswings and upswings may be a company level phenomenon. It is true that labour market demand and supply affects more than a single company or worker, and can affect a sector and or the national market. However, economic upswing and downswing relevant for our analysis would be the company's specific economic situation. This is an aspect already controlled for in this chapter from the company level variables (see chapter 4 for details). Due to this we do not include country's economic situation and cycles in the country- level analysis.

Economic globalization

Economic globalisation is another factor that is perceived to increase the need for flexibility in the labour market. There are many ways in which globalization affects the labour market. First, liberalization of the world economy or countries' integration into the world economy increases competition among national economies. This leads to changes in the production systems of firms as well as to changes in labour demand. 'Lean' production or 'just-in-time' inventory are the new types of production systems that adjust production and the labour force to labour market fluctuations more quickly than before, resulting in growth in non-standard work (Mishra, 1999: 25). Increases in the freedom of capital to move to other production sites also mean that workers have to compete against low-wage workers in other countries, thus decreasing the demand for low-skilled labour. The competition for product and capital also brings about an increase in the elasticity of wages and labour demand, especially for workers that can be substituted by foreign workers (Rodrik, 1997; Sapir, 2000). The bargaining power of labour weakens when the elasticity of labour increases, especially in periods of

chronic unemployment. This decrease in bargaining power enables capital to achieve flexibility in many ways, including employing workers on atypical contracts such as temporary contracts, involuntary part-time work as well as unusual hours and overtime (Mishra, 1999; Rodrik, 1997). Based on this, we can assume that globalization, or increased market integration into the global market, will increase companies' needs and bargaining power for flexibility arrangements that suits employers needs. Given the corresponding loss of worker's bargaining power, this may have a negative impact on the provision of work-life balance options to workers.

In addition, one can expect economic globalization, if it takes the form of foreign investment or foreign owned companies, to affect workplace culture of companies within the host country. For example, multi-national companies may keep their human resource management cultures, which will include working time practices and provision of work-life balance options, regardless of where the establishment is located. Coller (1996) finds that head offices of multinational companies indirectly deal with the local offices to ensure a degree of consistency of companies between different countries and different institutional environments. This is more likely to happen when the host country has weaker institutions (Muller, 1998).¹⁵

For both globalization and labour market situations, there may be a reverse causality relationship. In countries where extensive use of flexibility arrangements is prevalent, this may facilitate globalization and labour demand in a country, although it may also make the environment unfavourable for both.

Prevalence of sectors and economic structure

The prevalence of a certain industry or sector within the economy can also be a factor that determines the country's culture in the use of flexibility arrangements. In other words, high proportions of sectors that use more flexibility arrangements may change the culture of companies of different sectors within the whole country. For example, a prevalence of the public sector may effect the provision of work-life balance related working time arrangements within companies. Many previous empirical studies on

¹⁵ See International Journal of Human Resource Management 9(4) for an in-dept discussion on this issue.

companies' provision of work-life balance arrangements point out that, on average, public sector companies provide more arrangements than private ones (Evans, 2001; OECD, 2001; Plantenga and Remery, 2005). The reasons are that public sectors are less prone to market pressures and may employ a larger proportion of women. In addition, public sectors are seen to be under more pressure to take gender equality norms into account and to set precedence for other companies to follow (Evans, 2001; OECD, 2001; Plantenga and Remery, 2005). For this reason, public sector organisations often take the lead in adopting work-family arrangements (Den Dulk, 2001; Evans, 2001; Den Dulk et al., 2005). As a result, in economies where the public companies are prevalent, the whole working culture of the country may be expected to change into that which is similar to the public sector, which would be in most cases more worker-friendly. This would especially be the case where there are a large proportion of public sector companies or workers, and a large coverage of collective agreements. Public sector companies may drive how the agreements are shaped, which would then be applicable to the whole sector to affect even private sector companies.

We can expect somewhat of a similar effect for the size of the service sector or through the process of deindustrialization. Services sector generally use more flexibility arrangements than industry sectors (Anxo et al., 2007a; 2007b; Chung et al., 2007; Kümmerling and Lehndorff, 2007). Also, the growth of flexible working patterns has been linked with the growth of the services sector (Houseman, 1995; Kalleberg, 2000). The increase of service sector or the process of deindustrialization may change the work culture to increase the use of flexibility practices throughout the economy, to the non-services sector as well.

2.3. Gender regime: Female labour participation as a proxy for gender work division culture

Another aspect that should be taken into consideration is cross-national variances in the gender division of work and the participation of women in the labour market (for example, Lewis, 1992; Ostner and Lewis, 1995; Gornick et al., 1998; Sainsbury,

1999; Crompton 2001; Stier and Lewin-Epstein, 2001; MacDonald, 2004). Lewis (1992) criticized the welfare state regime typologies for not incorporating the relationship between unpaid work and welfare. She noted that, when taking the prevalence of the traditional male-breadwinner family model into account, one can arrive at three types of countries: the historically strong male-breadwinner, the modified male-breadwinner, and lastly the dual-breadwinner societies (Lewis, 1992). Expanding this idea, Crompton (2001) examined the earner-carer divide throughout countries to derive models that range from traditional to less traditional, depending on who is responsible for income and care. Income responsibilities can fall either on the male or female on a full or part-time basis, and care responsibilities can be addressed by the male, the female, both, the state, or the market. Based on this division, the Nordic countries have a dual-earner and state-carer model, while the US is an example where there is a dual-earner and market-carer. The gender division of work or the gender regime may be a deciding factor in explaining the differences in working time flexibility practices between countries. This is especially important, because one of the main purposes of working time flexibility is to balance the work and life of workers. In countries where the dual-earner model is the norm, there are more women in the labour market. It is highly likely that, in these countries, there will be more working time arrangements that are employee-oriented or that are more suitable to balance work and life, such as flexible working schedules or various leaves. This may vary depending on whether it is the market or the state/society that provides the care.

The relationship between women in the labour market and the average amount of employee-oriented arrangements in the country can go both ways. In countries where the gender work-care division is more equal and women's participation in the labour market is the norm, it is likely that labour markets are made to be more women or family-friendly. Thus in these countries, companies may (have to) provide more work-life balance arrangements. It may also be the case that, in countries where there are more work-life balance arrangements, women are able to participate in the labour market more easily, thus increasing the labour market participation of women.

2.4. Operationalisation of variables and hypotheses

In this section, we operationalise the various theories examined in the section above and describe the indicators used for each country level factor. Again, the theories are grouped into three different categories. Firstly, there are the labour market institutions, including labour market regulation and labour relations, thus union strength and bargaining structures. Secondly, there are the economic structures and labour market situations, including labour market situation, economic globalization, and the prevalence of the public and service sectors. Thirdly, we have the cultural aspects of society, including the gender regime. Although we distinguish the variables as these three categories here, it is not easy to make such a strict distinction. For example, although gender regime here is treated as a cultural aspect, this could also represent the degree to which there are labour market institutions set to facilitate labour market participation of women. The descriptive table of the indicators is in the Annex 5-1 of this chapter.

Institutions: Labour market regulation and labour relations

For a measurement of labour market institutions, the Employment Protection Legislation (EPL) index provided by the OECD is used (OECD, 1994; 2004a). This refers to the regulations that concern hiring and firing of workers both on permanent and on temporary contracts (OECD, 1999:50). The EPL indexes for regular workers concerns the costs for employers of firing workers on regular contracts, while the EPL indexes for temporary workers refers to the regulations concerning hiring workers on temporary contracts.

There is much criticism on the use of EPL indexes (Bertola et al., 1999; Boeri et al., 2000; Schils, 2007). For example, in many countries collective labour agreements at either sector or company level may change the level of strictness of the regulations derived from laws (Schils, 2007). This results in the EPL indexes not truly representing the strictness of regulations companies have to adapt to. However, it is the most commonly available data comparable across many countries. For this reason, it is one of the most used indicators to measure flexibility of the country or to represent the rigidity of the labour market institution of a country (e.g., Layard et al.,

1991; Nickell, 1997; Esping-Andersen, 2000; Regini, 2000; CEC, 2006a; Muffels et al., 2008).

In this study, we use the EPL index for regular workers and the EPL index for temporary workers. There are no indexes that are readily available to use as proxies to measure the strictness of labour market institutions on working time, especially comparable across countries. It is possible to use proxies such as the regulation on working hours such as the restriction within the laws on overtime or annualisation of hours, and definitions used for unusual hours. For leave schemes, one can examine the existence and generosity of various leave schemes in the institutions. However, these will all be proxies measuring one of the various working time arrangements to represent a whole group of arrangements, which is another reason they are not used here. Here, EPL indexes are used also as proxies too loosely indicate the strictness of labour market institutions in general, presupposing that countries that have stringent regulations on firing and hiring workers will also have more stringent working time regulations.

There are three different factors relating to bargaining institutions that must be taken into consideration when examining a country's labour relations. They are union density, collective bargaining coverage rate, and centralization of bargaining. Centralization describes 'the locus of the formal structure of wage bargaining' (OECD, 1997:70), i.e., the level at which wage bargaining and negotiations take place; it varies from company or plant levels to central, national-level negotiation by peak organisations.

Both trade union density and the collective bargaining coverage rate represent the union strength at the bargaining table. Union density is the percentage of workers that have union membership, and here it refers to 'net' members excluding those who are non-active (OECD, 2004b: 144). The collective bargaining coverage rate measures the extent to which 'salaried workers are subject to union-negotiated terms and conditions in employment' (OECD, 2004b: 146). The relationship between the two measures is complex. Traditionally, union membership has been used as the prime measure of the power base of unions and their capacity for collective action (Shorter and Tilly, 1974; Korpi, 1983; Ebbinghaus and Visser, 1999). However, many

countries have administrative rules and extensions of wage agreements that supplement union representation in wage bargaining (Scarpetta, 1996: 54; Buti et al., 1998: 24), making it unnecessary for workers to become members of the union. For this reason, the collective bargaining coverage rate can be perceived as a better measurement of union power. On the other hand, Buti et al. note that the difference between the two can be interpreted as “artificial union power”, meaning the strength of unions which is not based on unions’ ability to gain support from workers, such as membership (Buti et al. 1998: 24). However, centralization and collective bargaining coverage rates are highly correlated in the sense that high coverage rates indicate that more workers are covered by agreements bargained, usually at the more central, national, or industry-level rather than through individual agreements. This brings problems of multicollinearity when both centralization and collective bargaining coverage is taken into account in the model. For this reason, union membership and centralization is included in our model to examine the effect of union strength and centralization separately.

The data for the net trade union density in 2004 is derived from European Foundation (2007: 6), and the centralization index which indicates at what level wage bargaining takes place is taken from European Commission (2004) (for specific methodology on centralisation, see CEC, 2004: 41).

Economic structures and labour market situations

To examine labour demand and supply or the labour market situation of the country, the unemployment rate average of the past five years (prior to the survey) is used. This will indicate the general trend in demand and supply in the labour market of the previous years. One can measure economic globalization through the inflow and outflow of capital and goods. These can be measured by foreign direct investment as a percentage of the GDP, and trade in goods and services as a percentage of the GDP, the former as a proxy of flow of capital, and the latter as the flow of goods and services. Although the two indicators are both measurements of the extent to which a country is exposed to or relies on global markets, the former also can be used as an indication of the extent to which foreign companies are established in a country.

As the measurement for the prevalence of the public sector, the number of companies that have answered that they are in the public sector from the ESWT data set is aggregated to the country level; this yields the percentage of companies that are within the public sector per country. This number is then weighted by the employee weight, which takes the size of each company into account, which results in the number of employees employed in public companies. Using the data from ESWT brings continuity in the definition of being within the public sector. Deindustrialization or the prevalence of the service sector is measured here as the percentage of service sector employment as a percentage of dependent employment. All data used from the economic structures and labour market situations is from Eurostat, with the exception of prevalence of the public sector.

Gender regime

There is no widely accepted grouping of countries to indicate their gender regime typology that shows the prevalent carer-earner model for each country. One can use other proxies such as female labour market participation to indicate the gender division of work. In this chapter, female activity rate average for 2001 to 2005 from Eurostat is used. This indicates the number of women participating in the labour market, thus showing the extent to which they are earners. This does not take into account the differences in women participating in the labour market part-time and those participating full-time. So it is not possible to distinguish between 1.5-earner household countries and two-earner household countries. In addition, women's participation in the labour market may not necessarily mean they are relieved from all care tasks. Using data from 27 European countries, Burchell et al. (2007) show that even when women work full-time, there are still unequal distributions of unpaid working hours between men and women (Burchell et al., 2007: 36). However for the current analysis, labour market participation rates are considered to provide sufficient distinction between countries and their gender regime characters.

2.5. Hypotheses

Table 5-1. Summary of the variables and main hypotheses of this chapter

	Variable	Effect on working time flexibility for employees	Effect on working time flexibility for employers
Institutions	Institutions: EPL regular workers, temporary workers	Negative: strict regulations lead to less use of arrangements, consistency between regulations and practice	Negative: complementary of external flexibility and internal flexibility, consistency between regulation and practice Positive: substitution effect between external and internal flexibility
	Union strength	Positive: strong unions promote better working conditions for workers	Negative: strong unions against/block use of flexibility detrimental to workers
	Centralization	Positive: centralization means more ability of unions to advance their interests, centralization means more national level regulation on work-life balance policies Negative: decentralized countries have more flexicurity policies	Positive: centralization makes countries' social partners to internalize costs Negative: decentralisation more power of employers to advance their interests
Labour market situations and structures	Labour demand: unemployment rate	Negative: enhanced workers' negotiation power when supply is low, no need for employers to provide WLB options as recruitment strategy when supply is high	Positive: enhanced employers' negotiation power when supply is high Negative: employers use flexible hours to adapt to labour shortage when supply is low
	Globalization: FDI, trade	Negative: increased competition, loss of negotiation power of workers ?: importing company cultures of the headquarters	Positive: increased competition, lean production, increased negotiation power of employers
	Prevalence of public sector	Positive: public sector driven work culture	Negative?: public sector driven work culture
	Prevalence of service sector	Positive?: service sector driven work organisation	Positive: service sector driven work organisation
Cultural issues	Gender regime: female participation	Positive: WLB to facilitate female participation	-

?: indicates hypothesis where the direction of the relationship is uncertain

As noted in the introduction, the key question is to examine the extent to which institutions can explain for the country variance, in comparison to the other country level characteristics, here noted as economic and labour market situation and

structures, and cultural issues. This is an interesting point of research due to the fact that labour market institutions have been criticized to make labour market rigid and have been considered as the usual suspect that decreases the labour market adaptability of welfare states. From this our hypothesis could be set as the following.

Hypothesis 4: Labour market institutions can explain for the cross-national variance of the use of working time flexibility arrangement bundles, more than other country characteristics.

In addition to the general hypothesis 4, based on the literature examined in the previous sections, we can come to the following hypothesis for each specific variable (Table 5-1). As we can see that for some of the variables it is quite clear what type of relationship could be found between the variable and the two working time components. However, for other variables their effect on working time practices are unclear, where the effect of the variable could be positive or negative.

3. Analysis outcomes

In this section, the outcomes of the multilevel, multi-variate regression analyses, which examine the determinants for the cross-national variance of the WTFC, are shown. Three models are estimated. The first model includes the different country level variables separately, to see their individual effects. The second model includes all of the country level variables together, to test the robustness of the effects found in the first model. This enables examination of the effect of the variable after taking all other country level characteristics into account. The third model tries to model the best fit model, including only the significant indicators into the model thus increasing our degree of freedom, and increasing the adjusted fit of the model. The specifications of the model are as in the next section.

3.1. Models

The focus of this chapter is to explain the difference between countries in how their companies provide and use working time practices. Here our focus is on the *pure effect of countries*, thus the differences between companies that share many other characteristics that may affect their working time flexibility practices, but only differ where (the country) it is located. For this reason, we examine the country variance left after the compositional effect is taken into account, in other words, when various company level characteristics are controlled for in the model.

The simplified version of our base model, that is the model without having included any of the country level determinants, is as shown below, (2.7). This represents the two-level random slope and random intercept multilevel model. Here y_{ij} indicates the two working time component scores, that is, employee-oriented WTFC and employer-oriented WTFC. X_{ij} indicates other company level explanatory variables, used here as control variables and β_p indicates the coefficients for these variables. In the initial, empty model no country level predictors (X_j) are included. In this model, we allow for the effect of being within the public sector (β_{1j}) is allowed to vary across countries.

$$y_{ij} = \beta_{0ij} + \beta_{1j}public_{ij} + \sum_p \beta_p X_{p ij} \quad \forall p = (1, \dots, P)$$

$$\beta_{0ij} = \beta_0 + u_{0j} + e_{0ij} \quad (2.7 \text{ repeated})$$

$$\beta_{1j} = \beta_1 + u_{1j}$$

$$\begin{bmatrix} u_{0j} \\ u_{1j} \end{bmatrix} \sim N \left(\mathbf{0}, \begin{bmatrix} \sigma_{u0}^2 & \\ \sigma_{u01} & \sigma_{u1}^2 \end{bmatrix} \right) \quad \forall j = (1, \dots, J)$$

$$e_{0ij} \sim N \left(0, \sigma_{e0}^2 \right) \quad \forall i = (1, \dots, I)$$

Note: i : company level, j : country level
 β_0 = coefficient for constant, β_{1j} = coefficient for the effect of being a public sector company X_p =other company level predictors (fixed effects), β_p =coefficient for company level predictors, u : country level error, e : company level error

In our next model we include country level predictors (X_j) into our model. The model can be depicted as (2.9) below.

$$y_{ij} = \beta_{0ij} + \beta_{1j} \text{public}_{ij} + \sum_p \beta_p X_{pij} + \sum_q \beta_q X_{qj} \quad \forall p = (2, \dots, P)$$

$$\beta_{0ij} = \beta_0 + u_{0j} + e_{0ij} \quad \forall q = (1, \dots, Q) \quad (2.9 \text{ repeated})$$

$$\beta_{1j} = \beta_1 + u_{1j}$$

$$\begin{bmatrix} u_{0j} \\ u_{1j} \end{bmatrix} \sim N \left(0, \begin{bmatrix} \sigma_{u0}^2 & \\ \sigma_{u01} & \sigma_{u1}^2 \end{bmatrix} \right) \quad \forall j = (1, \dots, J)$$

$$e_{0ij} \sim N(0, \sigma_{e0}^2) \quad \forall i = (1, \dots, I)$$

Note: i : company level, j : country level

y_{ij} = dependent variable, X_p =other company level predictors (fixed effects), X_q = country level predictors (fixed effects), β_0 = coefficient for constant, β_{1j} = coefficient for the effect of being a public sector company, β_p =coefficient for company level predictors, β_q =coefficient for country level predictors, u : country level error, e : company level error

X_{qj} represents the various country level variables that are included in the model and β_q their respective effects. In our first model, each country predictors are included separately. Then here $q=1$. In our next models, all or selected country predictors are included in the model.

In this chapter we examine not only the significance of the variable in the model, but also the amount of variance it explains. This explained variance is examined separately for the changes in the variance found in the random intercept, thus the cross-national variance in the average scores for companies having controlled for various company characteristics, and the changes in the variance for the random slope, that is the cross national variance of the effect of being a public company. The first variance change shows how country variables explain in the differences between countries in their averages scores on working time components, the latter variance change shows us what explains for the cross-national variance in the effect of being a public company on the working time component scores. More on variance calculations and the exact method of calculating the explained variance is elaborated in chapter 2 of this study.

3.2. Country level variance and scores

Before examining the results of the analyses, we first examine the country level variance that is to be explained in the models. The country level variance in this

random slopes model can be depicted as the equation (5.1). Thus, as we see, it is dependent on the company characteristic, that is whether or not the company is a public company or not. In other words, the variance between countries is different for public companies and private companies.

$$\text{Country level variance} = \sigma_{uo}^2 + 2 * \sigma_{uo1} \text{public}_{ij} + \sigma_{u1}^2 \text{public}_{ij}^2 \quad (5.1)$$

$$\text{ICC (proportion of country level variance)} = \frac{\sigma_{uo}^2 + 2 * \sigma_{uo1} \text{public}_{ij} + \sigma_{u1}^2 \text{public}_{ij}^2}{\sigma_{e0}^2 + \sigma_{uo}^2 + 2 * \sigma_{uo1} \text{public}_{ij} + \sigma_{u1}^2 \text{public}_{ij}^2} \quad (5.2)$$

The ICC, thus the proportion of the country level variance of the total unexplained variance is depicted in Figure 5-1. As the figure shows, there is not much difference in the county level variance for employer-oriented WTFC. Both for public and private companies, the country account for 14% of the unexplained variance. On the other hand, for employee-oriented WTFC, there is a marked difference between the public and private companies. Thus, for public companies between country variance accounts for 18 % of the total unexplained variance, whereas for private companies it is 14%.

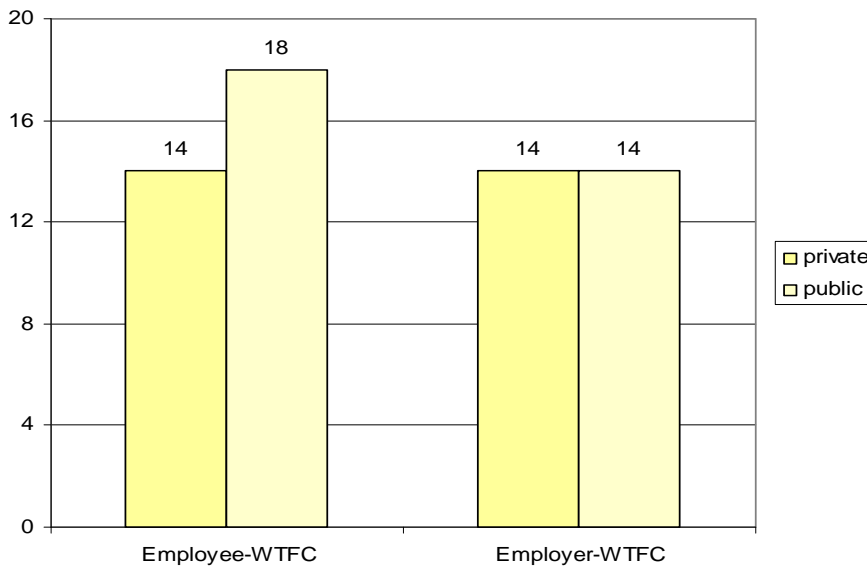


Figure 5-1. Country proportion of the unexplained variance in the random slope model for the working time practices across 21 European countries

Table 5-2. Country scores for working time flexibility components (controlled for company characteristics)^a = the dependent variable

	Employee-oriented WTFC	Employer-oriented WTFC
Belgium	- 0.19	0.07
Denmark	0.32	- 0.23
Germany	- 0.31	0.19
Greece	- 0.72	- 0.78
Spain	- 0.67	- 0.42
France	- 0.40	- 0.06
Ireland	- 0.19	- 0.02
Italy	- 0.45	- 0.32
Luxembourg	- 0.52	- 0.07
Netherlands	- 0.05	- 0.03
Austria	- 0.44	0.18
Portugal	- 0.65	- 1.01
Finland	0.48	- 0.12
Sweden	0.14	0.07
United Kingdom	- 0.17	0.21
Czech Republic	- 0.08	- 0.02
Cyprus	- 0.75	- 0.49
Latvia	- 0.27	0.07
Hungary	- 0.07	- 0.65
Poland	0.40	- 0.18
Slovenia	- 0.35	- 0.56
Mean (weighted)	- 0.22	- 0.17
Std D.(weighted)	0.35	0.32

a: The scores in this table represent the factor score for the average company in the model (in manufacturing sector, the private sector, with 50 to 99 employees, with 40%~60% of female, skilled, younger and older workers, without a collective bargaining on working time nor an employee representative, no work variation during day, week or year, in a quite bad economic situation, and do not use temporary workers nor work-life balance facilities)

Note: this score is different from the one shown in Chapter 3 Table 3-7 because various company characteristics have been controlled for in the scores represented in this table.

Table 5-2 shows the country scores for the derived company working time flexibility components (factors) having controlled for the company level characteristics (see Chapter 4, Section 3 for more details). In countries with higher scores the average company provides more working time arrangements that facilitate either employees (second column) or employers (third column). One thing to note here is that these scores are different from the country average component scores found in Chapter 3 Table 3-7, but is what is represented in Chapter 4, Figures 4-6 and 4-7. As shown in Table 5-2, the northern European countries, that is, Finland, Denmark, and Sweden

along with Poland, are the countries where there are companies with high scores for the employee-oriented WTFC. UK, Germany, and Austria, are the countries where the employer-oriented WTFC scores are high on average. For both components, it is the southern European countries, Greece, Spain, Italy, Portugal, and Cyprus, along with Slovenia, where the lowest average scores are found. Other countries are in between the two country groups, but in general it is clear that in countries where one component score is high, the other tends to be high as well.

3.3. Country level variables taken separately

In our first model, various country level determinants listed in Table 5-1 are tested separately to see their effect in explaining the variance of the two working time flexibility components scores of companies.

As Table 5-3 shows, only few variables have positive effects on the WTFC scores, when its effect is examined separately. EPL index for temporary workers is negatively related to the employee-oriented WTFC. On the other hand, the size of the public sector, the female activity rate, and union density are positively related to the employee-oriented WTFC. The EPL indexes for temporary workers as well as those for regular workers have negative relationships with employer-oriented WTFC, whereas the size of the public sector has a positive relationship. Service sector employment also seems to be positively related to employer-oriented WTFC. This outcome shows that in countries where the regulations for the use of temporary workers are less stringent, there seems to be more use of working time flexibility in the company for both employee and employers, thus suggesting a complementary effect. The relationship found between the EPL index for regular workers and the WTFC scores, although not big, confirms this theory. However, when considering the fact that this effect holds when the use of temporary contracts within the companies are controlled for, it can also be the case that both EPL indexes here represent less stringent rules on the labour market policies in general. In this case, we can interpret the outcomes as showing that, in countries where there are less restrictive labour

market institutions, companies use more flexibility arrangements. This can be argued as a case for consistency between institutions and practices.

Table 5-3. Effect of various country level characteristics taken separately

	Employee-oriented WTFC			Employer-oriented WTFC		
	Effect	Variance explained (%) at country level		Effect	Variance explained (%) at country level	
		Intercept	Random slope		Intercept	Random slope
Empty model ^a						
EPL regular	(-)	14 (i)	2 (i)	(-)*	9	0
EPL temporary	(-)**	36 (i)	2 (i)	(-)**	16	0
Union density	(+)*	13	0	(+)	1	4
Centralization	(+)	4	0	(+)	7	4
Unemployment average	(+)	6	- 2	(0)	0	0
FDI as % of GDP	(0)	3	- 2	(0)	0	0
Trade as % of GDP	(0)	0	0	(0)	5	4
Public sector size	(+)**	42	-5	(+)*	15	4
Service sector employment	(0)	0	0	(+)**	24	4
Female activity rate average	(+)**	28	0	(+)	10	4

a: controlling for company level characters and allowing variance between countries in the effect of being within the public sector.

* represent those significant at the 90% confidence level, ** at the 95% confidence level, *** at the 99% confidence level

Note: When EPL indexes are included in the model, Luxembourg and Cyprus is excluded from the analysis. (i) represents the increase in company variance.

In countries where there is a prevalence of public sectors, there seems to be more use of WTF arrangements for both employers and employees but the relationship is stronger for the latter case. The relationship between prevalence of public sector companies and employee-WTFC confirms the hypothesis given in section 2, but what the relationship between public sector prevalence and employer-oriented WTFC means is yet to be concluded. Companies in de-industrialized countries on average seem to use more employer-oriented working time arrangements, regardless of whether they are within the service sector or the industry sector, which confirms the

set hypothesis. Countries with strong unions seem to have companies with higher employee-oriented WTFC scores. This is also the case for countries with more women participating in the labour market, which confirms the hypothesis that employee-oriented WTFC scores will be high in countries where there is more need to facilitate women in the labour market. Although this could also imply that those countries where on average more work-life balance oriented working time arrangements are provided, more women participate in the labour market. In addition, countries where the collective bargaining is negotiated at the central level, companies use more working time arrangements for both employees and employers. However, this relationship is not significant, and changes when various country level characteristics are controlled for, as shown in the next section.

The model explains more of the cross-country variance of the average component scores when it includes significant variables in the model, while when non-significant variables were included in the model, naturally not much of the variance is explained. In addition, we can see that the cross-country variance on the effect of being a public sector, does not change much even when we include various country level characteristics. We can even see a slight increase of this variance for the employee-oriented WTFC, when some of the country level variables were included. For a discussion on why this could happen and alternative methods to measure explained variance see Snijders and Boskers (1994).

3.4. Country variables: Taken altogether

The relationship found when the country level variables are taken separately shows how various country level characteristics affect WTF components individually. However, the relationships found can be driven by other factors which are correlated to the variable in question. In the model where all the variables are put in together, we are essentially examining the effect of the variable, after having taken all other country level characteristics into account. In other words, each theory is tested after having controlled for all other characteristics, thus finding the pure added effect of the specific country level variable on the WTFC. This approach also allows us to test the

robustness of the model and the relationship between the variable and the WTFC scores.

When we include all country characteristic indicators into the model, more significant results were found in comparison to the single indicator model in Table 5-3, and a large amount of the variance was explained. In the model explaining employee-oriented WTFC scores, the indicators combined explain approximately 89% of the variance at the country-variance of the intercept, thus the average scores. However, almost none of the variance found for the cross-national effect of being a public company was found, that is, only 2%. In other words, the various country level variables included in the model do not explain the cross-national variance found in the effect being a public company. The same goes for the model for the employer-oriented WTFC. 75% of the total country variance of the intercept is explained by the use of all country level characteristics. However, none of the cross-national variance found for the effect of being a public company was explained through this model.

All of the indicators that were significant individually in explaining the scores of employee-oriented WTFC were found to be significant even when other country level variables were controlled for, with the exception of the size of the public sector (Table 5-4). This may have to do with the fact that the female activity rate is correlated to the size of the public sector (see Annex 5-2 of this chapter) and the former cancels out the latter when put in the model together. The effect of union density is stronger when other country level variables are taken into account. In addition, there are additional indexes which turn out to be significant after other variables are controlled for. The effect of labour market situations on the use of the employee-oriented WTFC shows the opposite result from the set hypothesis, and high unemployment rate is positively related to more use of employee-oriented working time arrangements. However, this may have to do with the relationship between other variables, such as union density and trade average, both of which are negatively correlated to unemployment averages. One can also think of situations where companies use leave schemes, which take up a great majority of the employee-oriented WTFC, as buffers instead of dismissals. In other words, when there are high demands for goods and when there are labour shortages, companies may not be able

to provide as many leaves schemes since there is no excess labour. However, when the opposite is the case, then companies may encourage workers to take (un-paid) leaves until economic situations improve. Lastly, it can be due to reverse causality, where the (extensive) use of employee-oriented working time arrangements decreases demand for workers.

Table 5-4. Regression outcome with all country level variables

		Employee-WTFC	Employer-WTFC
EPL regular		- 0.002(0.072)	- 0.093(0.103)
EPL temporary		- 0.159(0.043)***	- 0.145(0.062)**
Union density		0.839(0.233)***	- 0.812(0.338)***
Centralization		- 0.415(0.278)	0.689(0.405)*
Unemployment average		0.068(0.016)***	0.048(0.022)**
FDI as % of GDP		0.000(0.025)	- 0.040(0.037)
Trade as % of GDP		0.006(0.003)**	0.007(0.005)
Public sector size		0.000(0.004)	0.001(0.006)
Service sector employment		0.004(0.008)	0.032(0.012)***
Female activity rate		0.015(0.007)**	0.019(0.010)*
N		13962	13962
-2*loglikelihood		36094.707	34617.254
country level variance explained (compared to base model)	Intercept	89%	75%
	Public random slope	2%	0%

Note: * represent those significant at the 90% confidence level, ** at the 95% confidence level, *** at the 99% confidence level

Note: Of the company characteristics, public sector effect was allowed to vary across countries for both factors. Companies in Luxembourg and Cyprus were excluded from this analysis due to the inclusion of EPL indexes. For the employee-WTFC model, the variance in the company level has increased slightly from the base model.

Economic globalization as in percentage of trade also comes out as being positively related to employee-oriented WTFC, which is contrary to the given hypothesis. This may be due to the fact that small countries that are relatively well off, such as Luxembourg (although excluded in this model), Belgium, Ireland, the Netherlands, and Austria, have more exposure to globalization and higher trade proportions. This may imply that globalization may enhance competition in the country, but may have

different implications for different countries of different economic development levels. It may also be due to reverse causality where countries with more employee-oriented flexibility arrangements were able to facilitate increase in trade more than others. Although the relationship is insignificant, we can see that the direction of the relationship between employee-oriented WTFC and centralization of bargaining has changed. As we can see when we control for other country level variables, including union density, countries with decentralized bargaining are now the ones with higher employee-oriented WTFC scores.

For the employer-oriented WTFC, the effect found in Table 5-3 for the EPL indexes for temporary workers as well as service sector size is confirmed in the combined model. However, the size of the public sector, which was significant when taken separately, ceases to be significant in the latter model, as it is the case for employee-oriented WTFC. On the other hand, unemployment rate as well as union density, and centralization, all show significant effects on the employer-oriented WTFC scores. The relationship between unemployment rates and employer-oriented WTFC scores implies that, in times of labour surplus, there may be a shift in negotiation powers towards the employers to negotiate working conditions, thus increasing the use of employer-oriented arrangements. In addition, we find that countries where net union density is low, thus a country where most probably the unions are weak, companies use more employer-oriented working time arrangements than in countries where union power is strong. This result corresponds to the result we get from the employee-oriented WTFC. Where bargaining is centralized, there are more employer-oriented arrangements, even when other things, such as union density, are controlled for. This may indicate the ability of the centralized coordinated systems to adapt to needs of flexibility better than the decentralized systems. However, this may also imply that centralized bargaining countries have more full-time working hours as the norm. Lastly, when all variables included in the model, female activity rate is also positively correlated to the employer-oriented WTFC scores. It is uncertain why this would be the case, but, it may have to do with the over-representation of female workers in secondary markets, where working conditions are not as favourable.

3.5. Country variables: Best fit model?

Lastly, a model only including the significant variables is derived, thus increasing our degree of freedom and the adjusted fit of the model.

Table 5-5. Regression outcome with only significant country variables

Dependent	Employee WTFC	Employer WTFC model 1	Employer WTFC model 2	
EPL regular				
EPL temporary	- 0.159(0.035)***	- 0.220(0.049)***	- 0.209(0.055)***	
Union density	0.890(0.189)***	- 0.605(0.302)**		
Centralization	- 0.460(0.243)*	0.782(0.343)**		
Unemployment average	0.068(0.010)***	0.051(0.016)***	0.038(0.017)**	
FDI as % of GDP				
Trade as % of GDP	0.006(0.002)***			
Public sector size				
Service sector employment		0.030(0.006)***	0.030(0.007)***	
Female activity rate	0.016(0.005)***	0.010(0.007)		
N	13962	13962	13962	
-2*loglikelihood	36095.348	34612.340	34626.844	
country level variance explained	Intercept	86%	69%	58%
	Public random slope	5%	4%	0%

* represent those significant at the 90% confidence level, ** at the 95% confidence level, *** at the 99% confidence level

Note: Of the company characteristics, the public sector effect was allowed to vary across countries for both factors. Companies in Luxembourg and Cyprus were excluded from this analysis

For the model for the employee-oriented WTFC score, even when all of the non-significant variables, from the model shown in Table 5-4, are excluded, not much of the explained variance of the model is lost. Of the total country variance for the intercept, 86% is explained through the model including only the significant variables. The significance of all variables is also increased, although the size of the effect does not change much. In addition, now the centralization variable becomes significant.

Two models are shown for the employer-oriented WTFC score. The first model includes all variables that were found to be significant in the model in Table 5-4. A bit of explained variance is lost and the female activity rate is no longer significantly related to this component. Unlike the model for employee-oriented WTFC, there also seems to be changes in the size of the effect of the significant variables. The effect of EPL for temporary workers, centralization and unemployment to some extent becomes even stronger, and the effect of union density and service sector employment becomes weaker. An interesting point about this model is that the industrial relations variables are only significant when the female activity rate is included. When the female activity rate is taken out, the model in the far right can be found, where only EPL for temporary workers, unemployment rates, and service sector employment are significant. However, in this model, the explained variance decreases to only 58% of the total variance. For the cross-national variance of the effect of being a public company, not much of the variance is explained through the use of these variables. The largest decrease was in the best-fit model of the employee-oriented WTFC, where 5% of the total variance found in the base model was explained for.

3.6. Summary

In summary, the outcomes are as follows. EPL levels can explain the differences in the practices of working time in European companies, but, it is rather the EPL indexes for temporary workers rather than the EPL indexes for regular workers. For both flexibility components, taken separately and together, the relationship found is negative. This indicates that companies in countries with relaxed rules on the use of temporary contracts, use more working time arrangements compared to companies in countries with stringent rules. However, if we predict that countries with less stringent regulation on the use of temporary contracts may also have less stringent rules on the labour market in general, including those on working time, this result may be read as countries where institutions are relaxed, there is more flexibility in companies, thus showing a consistency between regulations and practices. However, this must be tested with the exact working time regulation proxies to draw further conclusions.

Countries with strong unions, measured here as union density, have companies that provide more employee-oriented working time flexibility, and use less employer-oriented working time flexibility, also when the level of bargaining and other country characteristics are controlled for. When union density and other country variables are controlled for, companies in decentralized countries have more employee-oriented working time flexibility, whereas companies in countries with centralized bargaining have more employer-oriented working time flexibility.

Table 5-6. Summary of outcomes

Variable	Effect on working time flexibility for workers		Effect on working time flexibility for companies	
	separately	combined	separately	combined
EPL regular workers				
EPL temporary workers	-	-	-	-
Union density	+	+		-
Centralization		- or n.s.		+
Unemployment rate		+ (?)		+
Globalization: FDI				
Globalization: trade		+ (?)		
Size of public sector	+		+	
Size of service sector			+	+
Female activity rate	+	+		+ or n.s.

Note: n.s = not significant, + : positive effect, - : negative effect
(?): indicates results that are against the set hypothesis.

Companies in countries with high unemployment rates seem to have both high use of employee- and employer-oriented working time flexibility, when other country characteristics are controlled for. Countries that have a high share of trade in their economy seem to have companies that provide more employee-oriented working time

arrangements, when other country characteristics are constant. Companies in countries with large public sectors have both more employee-oriented and employer-oriented working time flexibility, but this effect ceases to exist when other country characteristics are taken into account. Companies in countries with larger service sectors seem to use more employer-oriented working time arrangements, regardless of whether the other country characteristics are taken into account. Lastly, in countries with high activity rates for women in their labour market, companies seem to provide more employee-oriented working time flexibility, regardless of the proportion of female workers they themselves employ.

4. Conclusions

This chapter examines the key determinants that explain the variance between countries in the use of various working time arrangements, using the working time components established in chapter 3 as dependent variables. It is found that institutions as well as market structures and situations are important in explaining the practices of working time flexibility. In other words, the differences between company practices can only be explained through the combination of several factors that interact with each other. Labour market institutions including EPL, union strength, and collective bargaining structures are significant factors that explain the country differences in the use of various working time arrangements. However, labour market situations and structures, such as unemployment situations, globalization trends, deindustrialization, and women's participation in the labour markets are also important in explaining working time flexibility. In addition, unlike previous studies that have argued that labour market institutions have negative impacts on the development of flexibility, institutions seem to have different effects on different working time arrangements. In addition, the directions of the relationships are not always the same for each institution.

The following policy conclusions emerge from this. First, there seems to be room for policy changes in enhancing or reducing the developments of flexibility. As shown through the effects of EPL indexes on both working time components,

regulations are one of the most influential country characters that affect the behaviours of companies. However, it is still not clear which regulations the EPL indexes are representing here, especially because other regulations have not been included in the model. Additional labour market institutions, especially working time regulations, as well as others should be tested to measure their accurate impacts. This enables us to see exactly what types of policies are indeed influential and what kinds of results one can expect from their combinations.

Second, the industrial relations characters of a country, such as union density and centralization of bargaining affect working time flexibility practices of companies. The results show that density and centralization have opposite effects on the two working time flexibility components. Countries with decentralized bargaining and strong(er) unions with more employee-oriented working time flexibility, while countries with centralized bargaining and weak(er) unions have more employer-oriented working time flexibility. This implies that there are certain negotiation structures that may facilitate certain types of flexibility developments. In addition, despite the notion that centralized bargaining and strong union memberships go hand in hand, resulting in similar outcomes, here we see that this is not always the case. In fact, decentralized but strong unions are those that yield better outcomes for their workers in terms of providing more work-life balance arrangements. This point also needs to be investigated in more detail, especially in relations to other variables that may be affected by, or affects bargaining power and structures, such as EPL, unemployment, and globalization.

Third, there are implications for female labour market participation with the use of employee-oriented flexibility. Although the causality of the relationship needs to be investigated in more detail, the outcomes imply that the enhancement of worker-oriented flexibility used within companies may actually enhance women's participation in the labour market. This notion is hardly new and has already been noted frequently in HR management and other fields. However, this study only examines female activity rates as the gender dimension proxy. This should be elaborated further to see which types of female labour market participation, i.e. full-

time, part-time, shorter part-time, can result from various types of employee-oriented flexibility arrangements.

Lastly, there are still some results that are difficult to interpret and go against the set hypotheses. These are the effect of unemployment rates and globalization on the worker-oriented working time component. Although it could be a case of reverse causality, it may also be outcomes of interactions between country level variables, i.e., a result of another variable, perhaps unobserved in the model. However, this also needs further investigations before any conclusions can be made.

[Annex 5-1] Country level indicators

	EPL regular workers 2003 ^a	EPL temporary workers 2003 ^a	Unemploy- ment rate 2001~2005 ^b	FDI as % of GDP ^b	trade as % of GDP ^b	Size of public sector ^b	Size of svc sector ^b	female activity rate ^b	net trade union density 2004 ^b	collective bargaining coverage rate 2002 ^b	centralization of bargaining ^a
Belgium	1.7	2.6	7.8	9.3	80.9	20.7	76.5	56.6	49	96	0.61
Denmark	1.5	1.4	5.0	3.8	43.8	36.4	75.1	75.5	80	83	0.54
Germany	2.7	1.8	8.7	1.2	34.8	27.7	70.7	65.0	18	65	0.47
Greece	2.4	3.3	10.2	0.8	26.7	16.9	61.1	52.3	20	65	0.39
Spain	2.6	3.5	10.5	4.1	28.3	17.5	64.6	54.6	16	81	0.38
France	2.5	3.6	9.2	3.7	26.1	33.0	75.2	63.3	8	90	0.17
Ireland	1.6	0.6	4.4	5.7	79.8	21.6	65.5	57.9	38	-	0.64
Italy	1.8	2.1	8.4	1.3	25.4	22.7	66.7	48.9	34	70	0.34
Luxembourg	-	-	3.6	355.3	122.0	11.4	76.9	54.4	46	58	0.33
Netherlands	3.1	1.2	3.6	8.5	60.0	45.9	78.5	68.5	25	81	0.58
Austria	2.4	1.5	4.4	2.5	52.7	9.1	64.3	63.8	33	98	0.71
Portugal	4.2	2.8	5.9	3.1	30.9	12.3	55.0	66.2	17	87	0.30
Finland	2.2	1.9	8.9	2.7	36.0	29.0	68.3	74.2	71	90	0.57
Sweden	2.9	1.6	5.8	4.5	42.0	42.2	74.7	76.0	77	92	0.56
UK	1.1	0.4	4.9	3.6	27.6	25.3	75.2	68.2	29	35	0.13
Czech Rep	3.3	0.4	7.9	3.8	66.2	37.8	57.2	62.5	22	35	0.27
Cyprus	-	-	4.3	6.0	50.0	19.8	74.3	62.2	70	68	0.26
Latvia	2.3	2.1	11.0	1.8	49.2	43.2	60.7	64.6	16	20	0.30
Hungary	1.9	1.1	6.1	3.2	66.9	15.3	61.1	53.4	17	42	0.26
Poland	2.2	1.3	18.9	1.7	33.8	45.7	52.4	58.7	17	35	0.20
Slovenia	2.7	2.3	6.4	2.1	57.8	29.6	52.9	64.0	44	100	0.43
Mean	2.3	1.9	8.5	3.5	35.6	27.9	68.6	62.0	25	66	0.34
Standard D.	0.7	1.1	3.5	13.5	13.8	9.2	7.3	7.0	16	21	0.16

a: index scores

b: percentages

Source: OECD (2004), EUROSTAT, ESWT, European Foundation (2007)

[Annex 5-2] Correlation table of country level indicators

	EPLreg	EPLtemp	Unemp ave	FDI ave	Trade ave	Public size	Svc emp	Fem act	density	central
EPL temp	0.31									
Unemployment average	0.01	0.30								
FDI average	- 0.01	- 0.07	- 0.18							
Trade average	- 0.03	- 0.40	- 0.37	0.54						
Size of public sector	0.03	- 0.30	0.29	- 0.18	- 0.06					
Service sector employment average	- 0.38	- 0.03	- 0.50	0.18	0.10	0.16				
Female activity rate	0.14	- 0.33	- 0.34	- 0.13	- 0.06	0.47	0.35			
Union density	- 0.28	- 0.26	- 0.36	0.09	0.23	0.16	0.37	0.52		
Centralization	0.07	- 0.04	- 0.34	- 0.03	0.37	- 0.07	0.22	0.25	0.53	
Collective bargaining coverage rate	0.27	0.55	- 0.30	- 0.06	- 0.01	- 0.22	0.30	0.21	0.37	0.64

Note: all correlations are significant at the 0.01 level, with the exception of EPL reg with unemployment average and EPL reg with FDI average, both of which are not statistically significant.

Chapter VI. What is it good for? Performance outcomes of working time flexibility components

1. Introduction

The last issue addressed in this study is how the two components of working time flexibility affect companies' performance outcomes. If there are two distinct types of working time flexibility, and we have seen that different types of companies and countries take them up, what kind of results can we expect from them?

There have been several studies that argue that providing better work-life balance arrangements increases the productivity and loyalty of workers. When workers can manage their life with work better, this brings less stress and sickness, and improves workers' morale. These practices also prove to be profitable to employers as well, not only through reduced absenteeism and sickness, but also through improved recruitment, retention, and other aspects, thus enhancing overall productivity (Bevan et al., 1999; Evans, 2001; Dex and Scheibl, 2001; Dex and Smith, 2002; Yasbek, 2004; Seeleib-Kaiser and Fleckenstein, 2008). However, work-life balance policies have also been linked to greater costs as well. These costs involve direct payment and investment on corporate policy development and maintenance, and costs due to disruption in work (Yasbek, 2004:7; Dex and Scheibl, 1999; Evans, 2001). On the other hand, although the main purpose of introducing employer-oriented working time flexibility arrangements is to increase cost efficiency as well as to meet demands, they have also been seen to cause problems concerning health and safety issues (Dembe et al., 2005; Caruso et al., 2004; EIROonline, 2005b).

In this chapter, we examine the different performance outcomes companies have when using various types of working time arrangements. We focus on human resource (HR) related issues, such as sickness, absenteeism, worker recruitment, maintenance, and motivation. Also, we examine the overall performance of the company through indirect measurements. Due to the limited information included in the data set used, direct measurement of economic performance, such as financial turnover and labour productivity, could not be examined. A multilevel model is used

to examine the effects of the use of the two working time components in European companies. Other company characteristics that may affect performance outcomes are controlled for, to observe the more direct effect or pure effect of the use of working time arrangements. In addition, through the use of multilevel model we can examine whether the relationships found are country specific, and through the use of interaction terms in the model we can see if they are sector specific.

It is important to bear in mind the problems one always runs into when examining performance outcomes. The relationship between corporate policies on working time flexibility and performance outcomes is hard to decipher, since the observed causality will not always be clear-cut, even having possibilities of showing reversed causality. In other words, the outcome indicators or HR problem areas may be the reason why companies take up the specific working time arrangements, rather than being the result of it. Also, the outcome variables may be endogenous to the firm's other HR behaviour or strategies. It is hard to say how the flexible working practices in themselves will result in certain outcomes without putting other managerial/production practices and other environment in which the company is placed in, into consideration. However, we can still loosely link performance outcomes of companies with their working time flexibility practices to infer their possible impacts. We will keep this issue in mind when we examine the results of the analyses.

The chapter is structured as follows. Firstly, in the next section, theories and previous studies on the effects of using working time flexibility are examined. Secondly, in section three, we examine the variables used to indicate performance outcomes from the ESWT dataset, and elaborate on the models used in this chapter. In section four, data analysis results are shown, and section five provides conclusions and implications.

2. Effects of working time flexibility

This section examines previous studies on the outcomes of using various working time arrangements. Here, the studies are divided into those that deal with employee-oriented working time flexibility or family-friendly policies, and those that deal with employer-oriented working time flexibility.

2.1. Employee-oriented flexibility and performance

There are several ways in which providing employee-oriented arrangements can improve the performance of a company. Firstly, it is through reducing costs that may arise when the arrangements are not in place, that is, through reducing human resource related problems. This would then increase productivity of the company, putting companies in better economic situations. There are also ways in which employee-oriented flexibility increases productivity more in a direct manner. Here we look into these two types of arguments as well as previous studies that support these arguments empirically.

Cost reduction

Increasingly, the need to balance work and life arises for modern workers, especially after the increase of female labour market participation and changes in the family structures. Tensions between job demands and life demands, including those coming from family responsibilities, may lead employees to reduce those tensions through various means. Workers may try to relieve these tensions by spending less time and effort on their current jobs, which may result in withdrawal behaviour such as reduced work efforts, lateness, and absenteeism (Brett, 1997). Such behaviour will result in increased costs for the company (Blau, 1985; Konrad and Mangel, 2000). Workers may also try to relieve the tension by moving to a position or job that generates less stress, or leaving the workforce altogether (Greenhaus et al., 1997; Klerman and Leibowitz, 1999; Konrad and Mangel, 2000). Staff loss leads to direct costs associated with recruiting, and since recruiting new staff is costly, retaining staff can act as a huge cost reduction. This is especially true when one considers the investment put in

by companies to train their employees (Konrad and Mangel, 2000). On the other hand, it has been shown that companies offering family-friendly policies are successful at retaining employees, even if individuals do not use the policies themselves (Grover and Crooker 1995; Thompson et al., 1997). On the other hand, through providing various manners to balance work and life, this broadens the pool of people in which a company can recruit from (Evans, 2001), such as people who have care or other responsibilities, thus cutting the costs coming from recruitment even further. Lastly, even if not done intentionally, when workers are in stressful situations due to problems of balancing work and life responsibilities, this may decrease their productivity because of the health consequences due to these tensions, such as sickness and stress.

This relationship between work-life balance policies and performance outcomes mentioned have also been confirmed empirically in various studies. Many studies, using company data, have linked providing employee-oriented arrangements with reduced casual sickness, absenteeism, improved recruitment and retention, improved productivity, and improved morale, loyalty, commitment and job satisfaction (for example, Bevan et al., 1999; Dex and Scheibl, 1999, 2001; Whitehouse and Zetlin, 1999).

Productivity and economic performance

Providing employee-oriented benefits also has direct impacts on performance and productivity, in addition to the cost cutting benefits seen in the previous section. In competitive labour markets, especially where labour demand exceeds supply, firms may enhance their ability to attract (the best) workers through providing flexible policies alongside competitive remuneration packages (Konrad and Mangel, 2000; Yasbek, 2004: 13). Thus, productivity can be raised through the use of employee-oriented policies by attracting more productive and skilled workers. Also, such policies may encourage greater output by workers already employed, through increased loyalty and increased productiveness of workers (Yasbek, 2004; Konrad and Mangel, 2000). Although work-life benefits may not be tightly linked to individual job performance, there are a number of arguments and evidence that show general investments on behalf of the organisation may be rewarded with high discretionary

efforts by employees (Konrad and Mangel, 2000: 1227). In addition, using employee-oriented benefit packages may improve corporate image perceived by potential customers but also the general public, which may lead to greater sales and improved stock price of the company (Dex and Scheibl, 1999; Evans, 2001).

It is hard to actually measure the direct impact of work-life balance policies on productivity, since productivity has multiple causes (Yasbek, 2004). Some argue that businesses only take up family-friendly benefit systems when the benefits outweigh the costs (Plantenga and Remery, 2005). One way to examine productivity effects of work-life balance policies is to use the perceived performance impacts of the use of work-life balance policies by the managers. Dex and Smith (2002) analysed the impact of family-friendly employment policies of British establishments using this method. They report that managers respond having above average performance in financial performance, labour productivity, and quality performance, and also respond having rising sales value and reduced labour turnover through the use of various family-friendly arrangements. Even when controlled for other variables that may impact performances, the effects of having family-friendly policies seem to be positive. The number of family-friendly policies in a company also seems to have more distinct positive effect on the various performance measures. It has also been shown that the expectation of better performance based on having had good business performance in the past, is the reason why companies take up worker friendly flexible arrangements (Dex and Scheibl, 2001: 424).

Additional effects of skilled and female workforce

Konrad and Mangel (2000), using data from the US, show that the substantial marginal benefits of using work-life balance policies are larger where there are high proportion of professional employees or when there are large proportion of women within the establishment.

The reason why companies with a higher proportion of professionals may benefit more for work-life balance policies are as follows (Konrad and Mangel, 2000). Firstly, because the highly educated are associated with delayed family formation and work-family tensions may rise during their peak productive years. Secondly,

professionals have more control over their work or autonomy on how they manage it, thus making it harder to monitor their productivity. Thus, it will be hard to control when professionals turn their attention away from their jobs during working hours to mind to family issues due to lack of other methods. Also, it will be easier to implement flexibility in their work schedules, since it is usually flexible already. Lastly the motivation work-life policies may serve fits well with the professional control system (ibid: 1228). In addition, there are critiques that the studies that have linked employee-oriented policies to productivity have been mostly done only in professional and white-collar workplaces and not in blue-collar settings (Eaton, 2003). This could mean that the positive impacts of family-friendly policies may not hold true for some workplaces, such as blue-collar settings, as well as workforces, low skilled, implying there may be some sectoral and occupational group variation.

The proportion of women within the establishment may also change the performance effects of working time practices. Since women are still primarily responsible for family and child-care responsibility in most countries, firms employing a large portion of women are more likely to adopt extensive work-life balance policies, to reduce cost by increasing commitment, retention, and reducing lateness and absenteeism. In addition, because work-family conflict is greater for women (Greenhaus and Parasuraman, 1999), costs resulting from work-family conflict are greater in firms dependent upon a largely female workforce. Thus, work-life programs are likely to generate greater profit gains where there is a large proportion of female workers in the company (Konrad and Mangel, 2000: 1229).

Costs of employee-oriented policies

However, there are cost issues in using various flexible arrangements that are considered employee-oriented. Evans (2001) divides these into direct costs, supervision costs and administrative costs. Direct costs are the costs that occur due to implementing certain arrangements, including education and training the workforce about the arrangements provided. Supervision costs are cost derived due to managing workers' absences, various time shifts, and other non-standard working patterns, as well as overcoming the de-motivation of those not receiving benefits. Administrative costs include framing the policy, informing staff, advising how to claim them,

decision making on eligibility etc. In some cases, these costs may outweigh the benefits gained from using employee-oriented arrangements.

2.2. Employer-oriented flexibility and outcomes

Unlike employee-oriented flexibility arrangements, the main reason employers take up flexibility arrangements is because of direct cost benefits companies gain from its use. Brewster et al. (1994) argue that the main reasons for employers to take up flexibility arrangements are to reduce costs and improve effectiveness, to match work provision closely to work demand, to put greater focus on work rather than job, establish clearer performance targets, and to undertake closer more realistic performance monitoring etc. Meeting customers' needs is another reason why employers would take up employer-oriented working time arrangements. In other words, the main goal of implementing various employer-oriented working time flexibility policies is to increase profit, however, not necessarily through enhancing productivity. Here we examine the studies on the effects of using employer-oriented flexibility on performance outcomes, distinguishing between those on the effect on profit generation and performance, to those on the effects on HR problem issues especially concerning health and safety.

Performance and profitability

Although there have been many studies that link employee-oriented working time flexibility to performance measurements, it is not easy to find studies that link employer-oriented working time flexibility to performance. One of the reasons for this may be that since the use of various employer-oriented working time flexibility arrangements, such as overtime, unusual hours, and shift work, are used to match demand as well as to increase profit, which is directly observed by the managers. Due to this, there was no great need in the academic field to persuade companies to use such arrangements. There have, however, been studies that linked the use of flexible employment contracts with HR practices and corporate performance, which counter the arguments that using flexibility brings great cost effectiveness. The first stream of studies involves the examination of the effect of flexible working practices on

performance outcomes. These studies show that employer-oriented flexible working practices do not enhance performance significantly, or that they only increase short-term performance.

Valverde et al. (2000) examine the different performance outcomes of organisations, with different proportion of its workforce employed on numerically flexible contracts, using the establishment level survey across 20 European countries for 1989. Here flexible contracts include part-time contracts, temporary, fixed-term contracts, subcontracting, and annualized hours. Performance was measured through managers' perception of how well the company was doing in terms of financial turnover. Results show that the only statistical significant impact found was from the use of temporary contracts. Michie and Sheehan-Quinn (2001) examine the impact of flexible work practices, human resource systems, and industrial relations on corporate performances, using UK company level data. The results show that increasing flexibility, while positively correlated with short-term financial performances, was negatively correlated to innovation within the company. Michie and Sheehan (2005) examine the relationship between flexibility, HR strategy, with performance of companies. They use objective performance measurements, that is, three year averages of the percentage of change in total sales, the percentage of change in labour productivity, and the percentage of change in per-tax profitability. They find that the use of external flexibility within the establishment reduces the effectiveness of HR strategies, especially for those pursuing an approach that emphasizes innovation and quality-enhancement.

Health and safety outcomes of employer-oriented flexibility

More specifically to working time practices, there have been studies that link the use of various working time arrangements, used to facilitate demand and cost effectiveness for companies, with health and safety issues in the fields of medical science. These studies show how the use of various employer-oriented working time arrangements leads to hazardous health and safety outcomes.

Overtime has been linked to poorer perceived general health, increased injury and hazard rates, more illnesses, increased mortality, as well as decreased

performance (Dembe et al., 2005; Caruso et al., 2004). Shift work and unusual hours, such as night shifts, has also been recognized as risk factors for health, safety, and social well-being (Costa, 2003). Also, shift workers were found to be more susceptible to work overload, as well as being dissatisfied about their work-life balance (Williams, 2008). A study carried out by the Federal Institute for Occupational Safety and Health (FIOSH) in Germany has shown that shift work, overtime, and unusual hours, are all factors that increase mental stress for workers (EIROonline, 2005b).

From these results and others, we can conclude that employer-oriented flexibility arrangements have the potential to increase the HR related problems faced in the company. We can predict to see higher rates of sickness and absenteeism of workers, as a part of the direct effects of using the arrangements. In addition, workers may show more dissatisfaction with their work-life balance, and more stress from work. Thus, we can expect lower motivation and loyalty of workers, lower retention rates, as well as difficulties in recruiting workers in companies that use employer-oriented working time arrangements intensively. We can even expect a decrease in productivity, and thus a negative impact on economic performance as a part of indirect effects of the use of employer-oriented working time arrangements.

2.3. Country and sector variances

In this chapter, the countries variances and sector variances in the relationship between the use of working time flexibility and performance outcomes are explored. Countries have different institutions, as well as culture, including corporate culture. Also, we have seen in chapter 3 (Table 3-7) and chapter 5 (Table 5-2), that companies in different countries have different starting points in regards to working time component scores. Due to the different starting points – regardless of why they came about – the different scores of flexibility components will entail different levels of company involvement in different countries. Thus, the additional impact from the use of working time components can be different across countries.

In addition, companies in distinct sectors and countries will be in different situations in regards to the possible problems they may face in the areas of HR performances. For example, in sectors where there is no need to use skilled workers, the problem of recruiting skilled workers may not arise. In countries where there are large proportions of skilled workforce, it may not be hard to recruit high-skilled workers. In countries where there is a large supply of labour and not much demand, workforce recruitment as well as retainment may not be an issue. In some sectors sickness and absenteeism may occur more frequently due to the nature of the job. In sectors where there are more stress factors due to the nature of the job, such as in care related sectors, there may be more HR related problems that arise related to stress. In other words, countries and sectors have different needs as well as potential problems due to their nature and situation, thus the use of working time flexibility practices may also have different impact depending on the country and sector in question.

2.4. Hypotheses and model of the chapter

From the studies examined, we can derive the following hypotheses of the influence of the use of various working time arrangements on performance outcomes.

Hypothesis 5-1: The use of employee-oriented working time flexibility arrangements can be linked to better results in company performance in regards to human resource related issues, and due to this, better results in terms of overall productivity and economic performances.

Hypothesis 5-1-1. The effect of employee-oriented working time flexibility is stronger in companies where there are higher proportion of skilled workers and female workers.

Hypothesis 5-2: The use of employer-oriented working time flexibility arrangements can be linked to worse results in company performance in regards to human resource related issues, and due to this, worse results in terms of overall productivity and economic performances.

Hypothesis 5-3: The relationship between the use of working time arrangements and performance outcomes varies across countries

Hypothesis 5-4: The relationship between the use of working time arrangements and performance outcomes varies across sectors.

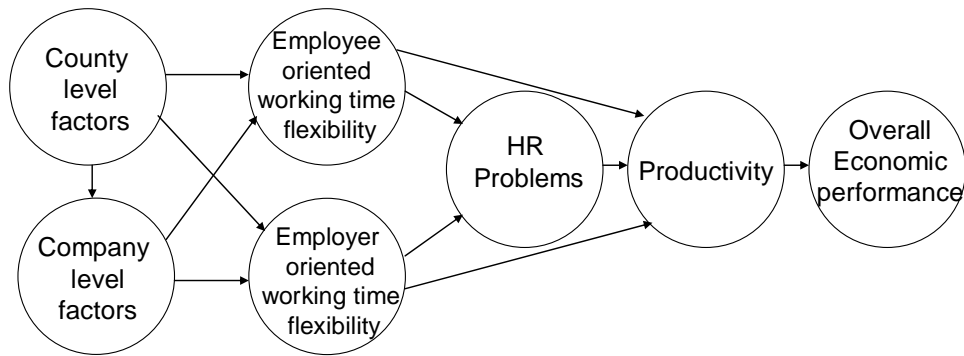


Figure 6-1. The relationship between company working time practices, company characteristics, country characteristics, and company performance outcomes

Figure 6-1 depicts the relationship between the use of working time arrangements and performance outcomes of companies. There are two types of working time flexibility components, as established in chapter 3. These two types of working time flexibility components will have different impacts on HR problem. Here the HR problem issues include worker sickness, absenteeism, morale, loyalty, recruitment, retention, and other issues. This will then impact the productivity of the company and the economic situation of the company in more of an indirect manner.

As elaborated in the previous chapters, there are several country-level as well as company-level factors that explain companies' working time component scores. In addition, although not depicted in the figure above, there are also several country and company characteristics that can explain company performance outcomes. Both company and country characteristics are influential in explaining company flexibility practices as well as company performance outcomes. Some factors can affect performance outcomes indirectly, through directly influencing the use of working

time practices. However, when we consider the endogeneity and reverse causality problem of working time practices and performances, these relationships are not as clear-cut.

Another relationship that is not depicted here is the direct effect the use of working time flexibility may have on financial profits, which increases the economic performance of the company. Since the ESWT data does not include information on financial profits, we cannot include this relationship in the model.

3. The Model

In this section, we describe the variables used in our analysis as performance measurements, and the models derived from it.

3.1. Variables

The dependent variable

There are two types of questions asked in the ESWT data set that can be used as performance measures. The first type concerns whether the company has confronted problems in the areas of HR. Managers were asked to choose, from various problem areas, those that they feel that their company is facing, in a dichotomous manner. However, they were not able to express to extent to which this is a problem. Thus, it is not possible to know the intensity of the problem faced. The indicators are examined separately, to see whether companies face certain problems depending on their working time component scores. Also, the number of problems the company faces will be examined through aggregating the number of problems faced per company, using the information from the individual problem issues. The second type concerns, the economic situation of the company. Managers were also asked how they perceive the economic situation of the company, where they could answer on a four scale measurement, i.e., very bad, quite bad, quite good, and very good. This will be used as a proxy for the economic situation of the company. Unfortunately, in the survey there

were no questions asked on the actual performance or productivity of the workers, nor were there questions on the financial turnover of the company.

Overall, the performances indicators used in this chapter are as follows.

HR problem indicators (dichotomous measurement)

- High absenteeism and/or high sickness rate
- Difficulties in finding staff for skilled jobs
- Difficulties in finding staff for low skilled or unskilled jobs
- Difficulties in retaining staff
- Low motivation of staff
- ‘Other’ problems (not defined)
- Total number of problems in the company (scale: aggregated number of problems from the individual problem area)

Economic performance indicator (scale)

- Economic situation of the company

When dealing with issues such as HR problems, one must carefully clarify what the responses really mean. A problem can only occur when there is a need for something that cannot be met. In the example of problem areas such as difficulties in finding staff for skilled or low skilled jobs, these problems can only occur when the company first has a need to recruit high skilled or low skilled workers. Thus not having a problem in these aspects can be interpreted as the company having succeeded in solving the issue, but also it could mean that the need to do these things, recruit workers in this case, was never there. On the other hand, the other problem/performance areas are not specific to special company situations, and are problems that could be faced in all types of companies in different situations, thus can be compared across all companies.

Control variables

To enable a proper assessment of the performance outcome of the company, we need to control for other factors that can influence performance outcomes. Through

controlling for these factors, we can compare two companies in the same situation that could result in similar performance outcomes, but only differing in the extent to which they use working time flexibility. Based on the previous studies on working time practices impact on company performance examined in the previous section, we control for the following variables.

- Sector – 13 categories, dummy variables – reference: manufacturing
- Public vs. private sector – dummy variable (reference: private company)
- Establishment size – 6 categories
- Composition – proportion of female workers – 5 categories
 - “ skilled workers – 5 categories
 - “ younger workers (younger than 30) – 5 categories
 - “ older workers (older than 50) – 5 categories
- Existence of employee representative body – dummy variable (reference: no employee representative)
- Headquarters, subsidiary or single-site – dummy variables (reference: single-site)

3.2. Models

In this chapter, several models are run. First, because the use of certain working time component will depend on certain characteristics the company has, it is worthwhile to see the bi-variate relationship between performance outcomes and working time component scores, without controlling for other company characteristics. Secondly, we examine the relationship when various relevant company characteristics that may influence performance outcomes of companies are controlled for, as listed in the previous page, to see the pure effects of working time components on performance outcomes. This model will be a two-level multilevel model, in which the company level and the country level both constitute as one level each. This equation can be presented as (2.5) for scale variables, which is a random slope multilevel linear

regression model including level 1 predictors, and (2.6) for binary variables, which is a random slope multilevel logistic regression model including level 1 predictors.

Here y is the total number problems faced in a company, or the economic situation of the company for (2.5), and whether or not the company has faced problems at (2.6). Among the various company level predictors, represented here as X_p we include the two working time components found. Through these models, we can examine the country intercept variance, represented here as the u_{0j} terms. This is the differences between the average company per country, in regards to the probability of facing a problem, the total number of problems faced, and their economic situations.

$$y_{ij} = \beta_0 + u_{0j} + e_{0ij} + \sum_p \beta_p X_{p ij} \quad \forall p = (1, \dots, P) \quad (2.5) \text{ repeated}$$

$$u_{0j} \sim N(0, \sigma_{u0}^2) \quad \forall j = (1, \dots, J)$$

$$e_{0ij} \sim N(0, \sigma_{e0}^2) \quad \forall i = (1, \dots, I)$$

Note: i : company-level, j : country-level

y_{ij} = dependent variable, X_p = company level predictors (fixed effects), β_0 = coefficient for constant, β_p =coefficient for company level predictors, u : country-level error, e : company-level error

$$y_{ij} \sim \text{Binomial}(1, \pi_{ij})$$

$$\text{logit}(\pi_{ij}) = \beta_0 + u_{0j} + \sum_p \beta_p X_{p ij} \quad \forall p = (1, \dots, P) \quad (2.6) \text{ repeated}$$

$$u_{0j} \sim N(0, \Omega_u): \Omega_u = [\sigma_{u0}^2]$$

$$\text{var}(y_{ij} | \pi_{ij}) = \pi_{ij}(1 - \pi_{ij})/1$$

Note: i : company-level, j : country-level

y_{ij} = dependent variable(binary), X_p = company level predictors (fixed effects), β_0 = coefficient for constant, β_p =coefficient for company level predictors, u : country-level error

In hypothesis 5-3, we predicted a cross-country variance in the relationship between the use of working time component and performance. Thus, that in different countries, that the relationship between working time component scores and performance outcomes is different. For the scale variables, this is done by using the model (6.1), similar to the model (2.7) in chapter 2, but with an additional random slope variable. For dichotomous variables, model (2.8) repeated from chapter 2, is used.

$$\begin{aligned}
 y_{ij} &= \beta_{0ij} + \beta_{1j}X_{1ij} + \beta_{2j}X_{2ij} + \sum_p \beta_p X_{pij} \quad \forall p = (3, \dots, P) \\
 \beta_{0ij} &= \beta_0 + u_{0j} + e_{0ij} \\
 \beta_{1j} &= \beta_1 + u_{1j} \\
 \beta_{2j} &= \beta_2 + u_{2j} \\
 \begin{bmatrix} u_{0j} \\ u_{1j} \\ u_{2j} \end{bmatrix} &\sim N \left(0, \begin{bmatrix} \sigma_{u0}^2 & & \\ \sigma_{u01} & \sigma_{u1}^2 & \\ \sigma_{u02} & \sigma_{u12} & \sigma_{u2}^2 \end{bmatrix} \right) \quad \forall j = (1, \dots, J) \\
 e_{0ij} &\sim N(0, \sigma_{e0}^2) \quad \forall i = (1, \dots, I)
 \end{aligned} \tag{6.1}$$

Note: i : company-level, j : country-level
 y_{ij} = dependent variable, X_1 = employee-oriented working time component (random effects), X_2 = employer-oriented working time component (random effects), X_p =other company level predictors (fixed effects), β_0 = coefficient for constant, β_{1j} = coefficient for employee-oriented WTFC allowed to vary across countries, β_{2j} = coefficient for employer-oriented WTFC allowed to vary across countries, β_p =coefficient for company level predictors, u : country-level error, e : company-level error

$$\begin{aligned}
 y_{ij} &\sim \text{Binomial}(1, \pi_{ij}) \\
 \text{logit}(\pi_{ij}) &= \beta_{0ij} + \beta_{1j}X_{1ij} + \beta_{2j}X_{2ij} + \sum_p \beta_p X_{pij} \quad \forall p = (3, \dots, P) \\
 \beta_{0ij} &= \beta_0 + u_{0j} \\
 \beta_{1j} &= \beta_1 + u_{1j} \\
 \beta_{2j} &= \beta_2 + u_{2j} \\
 \begin{bmatrix} u_{0j} \\ u_{1j} \\ u_{2j} \end{bmatrix} &\sim N(0, \Omega_u): \Omega_u = \begin{bmatrix} \sigma_{u0}^2 & & \\ \sigma_{u01} & \sigma_{u1}^2 & \\ \sigma_{u02} & \sigma_{u12} & \sigma_{u2}^2 \end{bmatrix}
 \end{aligned} \tag{2.8}$$

$\text{var}(y_{ij} | \pi_{ij}) = \pi_{ij}(1 - \pi_{ij})/1$
 Note: i : company-level, j : country-level
 y_{ij} = dependent variable(binary), X_1 =employee-oriented working time component, X_2 =employer-oriented working time component, X_p = company level predictors (fixed effects), β_0 = coefficient for constant, β_1 = coefficient for employee-oriented working time component, β_2 = coefficient for employer-oriented working time component, β_p =coefficient for company level predictors, u : country-level error

In model (6.1) and (2.8) y represents the total number of problem faced in a country or the economic situation of the company. X_1 represents the employee-oriented working time component score, and X_2 represents the employer-oriented working time component score, and X_p represents the other company level predictors included

in the model. As we can see both X_1 and X_2 are allowed to have random slopes thus different coefficients per country, as we can see here through the j term added in the coefficient as β_{1j} and β_{2j} , with the variance of $\sigma_{u_1}^2$ and $\sigma_{u_2}^2$, respectively.

In addition, in this chapter we investigate the sector differences between the effects of WTF components on the performance outcomes, hypothesis 5-4. This is done through the use of interaction terms with the WTF component scores and sector dummies. Also, to test if the effect of worker-friendly WTF component is stronger in establishments where there is a high proportion of skilled workers and female workers, hypothesis 5-1-1, we use interaction terms for the proportion of skilled workers and proportion of female workers with employee-oriented WTF component score. These could be presented as (6.2).

$$y_{ij} = \beta_0 + u_{oj} + e_{oij} + \sum_p \beta_p X_{pij} + \sum_q \beta_q X_{qij} * X_{1ij} \quad \begin{aligned} \forall p = (1, \dots, P) \\ \forall q = (P+1, \dots, Q) \end{aligned} \quad (6.2)$$

$$u_{0j} \sim N(0, \sigma_{u_0}^2) \quad \forall j = (1, \dots, J)$$

$$e_{0ij} \sim N(0, \sigma_{e_0}^2) \quad \forall i = (1, \dots, I)$$

Note: i : company-level, j : country-level

y_{ij} = dependent variable, X_p = company level predictors including working time components (fixed effects), X_1 = working time component, X_q = sector dummies or proportion of skilled, female workers, β_0 = coefficient for constant, β_p = coefficient for company level predictors, β_q = coefficient for interaction terms, u : country-level error, e : company-level error

Here y represents the total number of problems faced in a country or the economic situation of the company. For the model with interaction between working time components with sectors, X_q would be the 12 sector dummies, and β_q representing the coefficients for the interaction term with the working time components and the sector dummies. For the model with the interaction term with working time component with skilled worker proportions or female worker proportions, X_q will represent either the proportion of skilled workers or female workers inside the company, and β_q would represent the coefficient for the interaction term with the employee-oriented working time component and either the proportion of skilled workers, or proportion of female workers.

4. Analysis outcomes

4.1. Bi-variate

As noted in the previous section, a certain level working time component score already entails that the company has certain characteristics (for more see chapter 4 and 5). Due to this, a bi-variate analysis outcome will also provide fruitful information on the relationship between performance and company working time practices.

Table 6-1. Correlations of working time flexibility component scores and company performance outcomes

Problem issue	Employee-oriented component score	Employer-oriented component score
High sickness & absenteeism	0.03*	0.17*
Hard to find skilled workers	- 0.05*	0.07*
Hard to find low-skilled workers	- 0.08*	0.05*
Hard to retain staff	- 0.02*	0.06*
Low motivation	0.00	0.10*
Other problems	0.06*	0.09*
Total number of problems	0.01*	0.19*
Economic situation	0.00	- 0.02*

Note: * represent those significant at the 95% confidence level or higher.

Table 6-1 shows us that companies that have high scores on employee-oriented working time flexibility component (WTFC), thus companies that use various leave schemes and other worker friendly working time practices, are less likely to have problems in finding workers, both high and low-skilled, as well as retaining them. However, they are more likely to have problems with sickness and absenteeism as well as other problems than companies with average scores of employee-oriented WTFC. On the other hand, companies with high employer-oriented WTFC scores, thus those using overtime, unusual hours as well as shift work and other employer-oriented working time arrangements, are more likely to have problems in the entire HR problem aspects covered in the ESWT survey. This includes having problems with sickness and absenteeism of workers, recruiting, retaining workers as well as

keeping them motivated, and other problems, thus resulting in these companies having more problems overall. Also, the companies that score high on employer-oriented WTFC seem to be in poorer economic situations.

These results do not control for other factors that may affect company HR performances, including the use of the other type of working time component, which as we see in the above table, is influential. For this reason, we run multi-variate analyses, where other company level characteristics that may affect performance outcomes are controlled for. Without controlling for the factors that may be influential to the performance outcomes of companies, we cannot be certain if the relationship found in Table 6-1 is robust or not. This is because the results may be driven by other factors that are not being measured in the model.

4.2. Multi-variate¹⁶

Here we include the company level variables that might influence company performance outcomes, to examine the controlled effects of using employee-oriented and employer-oriented working time flexibility components. Four models are examined in this chapter. First, we run a model where various company level characteristics are controlled for while allowing for country differences in the average possibility of facing problems or the number of problems and the economic situation (random intercepts model), using the equation (2.5), (2.6) in the previous section. Second, we run a model allowing for country variance on the effect of employee- and employer-oriented WTFC (random slope model), which is the model (6.1). In addition, we examine if there are any significant cross-sectoral differences found in the effect of employee- and employer-oriented WTFC (interaction model), thus model (6.2). Lastly, we test to see if there are additional effects of employee-oriented WTFC in companies with higher proportions of skilled and female workers (interaction model), represented as model (6.2).

¹⁶ All models can be provided upon request.

Effects of WTFC controlling for company characteristics

As we can see from the Table 6-2, with the exception of “other problems”, companies that use more employer-oriented working time practices have lower chances of having a HR related problem within their company, perceived by the managers. In the case of finding workers, both high and low skilled, this difference is statistically significant. Also, we find a negative relationship between the use of employee-oriented working time flexibility and the total number of problems faced in a company, although, it is not statistically significant.

Table 6-2. The effect of working time flexibility components on various problems within the establishment and its economic situation controlled for various company level characteristics

Dependent \ Independent	Constant	Employee-oriented WTF component	Employer-oriented WTF component
Sickness & absenteeism	25.6	- 0.2	4.1 ***
Hard to find skilled workers	41.7	- 0.7 *	3.5 ***
Hard to find low-skilled workers	15.8	- 1.9 **	4.0 ***
Hard to retain workers	11.7	- 0.3	3.5 ***
Low motivation of workers	17.2	- 0.5	4.0 ***
Other problems	6.5	2.9 ***	3.6 ***
Total number of problems	1.216	- 0.011	0.115 ***
Economic situation	3.049	0.024 ***	- 0.007

Note: Numbers for first six rows (columns) are the probability difference derived from the changes in the score of working time flexibility component in comparison to the average firm, and the last two rows (columns) are the changes in the number of problems or the situation perception.

Numbers in the parenthesis represent the standard errors.

* represents those significant at the 90% confidence level, ** at the 95% level, and *** at the 99% level

Two-level multilevel model with country constant variance (significant for all models)

The company level variables that were controlled for can be found in section 3 of this chapter. Here, in the model both WTFC scores are included.

Why companies that have employee-oriented flexibility are more prone to have “other problems” is uncertain. Since other problem issues were not specified in the survey, it could entail a whole range of issues. Based on the literature, this may include the conflict between those who take up the arrangements and those who do not, as well as high indirect labour cost due to the use of such arrangements. However, this may also

be due to reverse causality. Thus this shows how companies start providing employee-oriented arrangements due the fact that there are problems in the company, such as their employees not being able to balance work and life.

What we can also see from Table 6-2 is that companies using more employee-oriented flexibility are in better economic situations. The positive relationship between economic situations and the use of employee-oriented working time arrangements can results from various reasons. This can be due to the fact that using employee-oriented working time arrangements lead to less HR related problems, it can be due to increase in productivity through other manners, as mentioned in previous literature in section 2. However, the relationship can also be due to reverse causality. Thus, companies that are in better economic situations may be the ones that have the room to provide more employee-oriented working time arrangements. This relationship has been examined in chapter 4 of this book, and it has been shown that even when other things are held constant, economic situation of the company affects the working time practices of the company.

On the other hand, companies that use more employer-oriented WTFC have higher chances of having problems in all aspects of the HR issues addressed in the survey. On average, increase of 1 in the employer-oriented flexibility component score will increase the chances of having each of the addressed HR problem by approximately 4 percent. This increase is especially stronger for the possibility of having problems with sickness and absenteeism, and problems with low motivation of workers. This increase in the probability of having problems for each problem aspect naturally leads to the result where the use of employer-oriented flexibility increases of the total numbers of problems faced in the company. However, when controlled for other factors, the use of employer-oriented WTFC is not significantly directly related to bad economic situations of the company.

Virtuous and vicious cycles

Based on the results from our analyses presented in Table 6-1 and 6-2, along with the results found in chapter four, we can derive a vicious vs. virtuous cycle of economic situations, HR problems, and working time practices as the figure below.

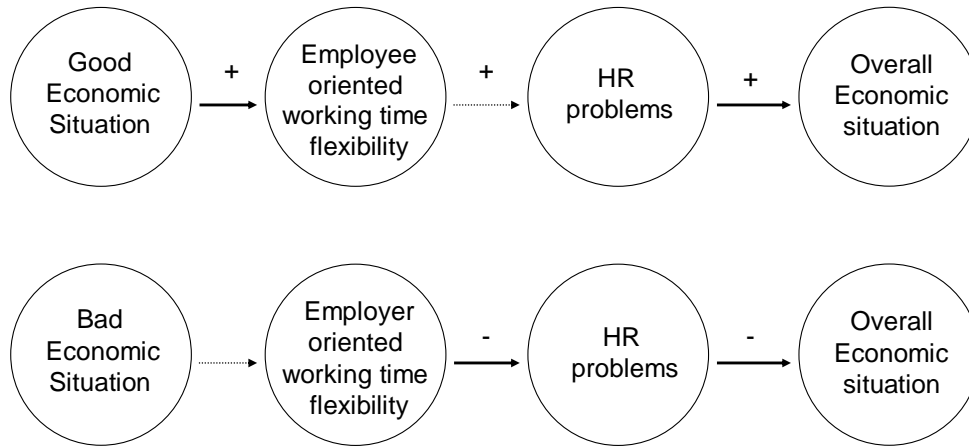


Figure 6-2. Virtuous/Vicious cycle of working time practices and performance

Note: the darker lines represent statistical significance in the relationship when other variables are taken into consideration.

Here we can see that companies in better economic situations are providing more employee-oriented working time practices, when other factors are taken into consideration. These practices then reduce the probability of having various HR related problems, although this relationship is not statistically significant for some problem issues. Decreased number of HR problem will then improve productivity, thus putting the company in better economic situations.

On the other hand, companies in bad economic situations use more employer-oriented working time practices, although when other company characteristics are held constant, this relationship does not hold. Thus here this relationship is shown in a lighter line. However, companies that use large amounts of employer-oriented working time flexibility, have more HR related problems, both when other factors are

taken into account and when they are not. Due to the high number of HR related problems, the company will be in a bad economic situation.

Firstly, to test the relationship between the total number of HR problems and economic situations, we run bi-variate and multi-variate models of the number of HR related problems and economic situation of the company.

Table 6-3 shows the bi-variate model as well as in the two multi-variate models, where other company characteristics are held constant, and when working time flexibility components are controlled for and not controlled for. The results show that the total number of HR related problems faced in a company has a significant negative impact on the economic situation of the company, when we control for other company characteristics including the use of various working time components.

Table 6-3. The relationship between the number of problems within a company and its economic situation

Model	Economic situation of the company
	Coefficients
Total number of problem (bi-variate)	- 0.130 ***
Total number of problems + control variables (multi-variate)	- 0.087 ***
Total number of problems + control variables + working time flexibility components in the model (multi-variate)	- 0.084 ***

* represents those significant at the 90% confidence level, ** at the 95% level, and *** at the 99% level

Two-level multilevel model with country constant variance (significant for all multi-variate models)

The company level variables that were controlled for can be found in section 3 of this chapter.

Next, the question would be if the relationship between working time practices and HR problems will hold even when the economic situation of the company was to be held constant. Thus, would the introduction/use of employee-oriented flexibility be related to less HR problems even in companies in bad economic situations? To prove this we must show that the relationship between working time flexibility practices and the number of HR problem are significant even when economic situations of the company are controlled for.

Table 6-4 shows the regression results that explain the total number of problems within a company when various predictors are included in the model. For each model, the company level control variables mentioned in the previous section 3, were included. If we only include the employee-oriented flexibility along with the other control variables, there is a negative relationship between the use of employee-oriented flexibility with total number of problems in a company. Thus, the more employee-oriented flexibility the company uses, the less number of problems it has concerning HR issues. However, when we control for the economic situation of the company, and the use of employer-oriented flexibility components, the strength of the relationship decreases to be statistically insignificant. To investigate this issue further, we ran different models for companies in different economic situations separately. We found that when the HR manager has perceived the company to be in a bad or very bad, or even good economic situation, the use of employee-oriented flexibility does not decrease the number of problems faced in the company to a statistically significant level, although the negative relationship still exists.

Table 6-4. Working time practices and the total number of HR related problems within a company

Models	Variable	Total number of problems Coefficients
Employee-oriented flex + control variables	Employee-oriented flex	- 0.021 **
Above model + economic situation	Employee-oriented flex	- 0.015
	Economic situation	- 0.263 ***
Above model + employer-oriented flex	Employee-oriented flex component	- 0.005 *
	Employer-oriented flex component	0.109 ***
	Economic situation	- 0.261 ***

* represents those significant at the 90% confidence level, ** at the 95% level, and *** at the 99% level

Two-level multilevel model with country constant variance (significant for all models)

The company level variables that were controlled for can be found in section 3 of this chapter.

The results found can be interpreted as follows. Although the use of employee-oriented flexibility decreases the number of problems faced within a company, this is not true when the company also use much employer-oriented flexibility and or are in bad economic conditions. Thus the true driving factor for company performance issues may actually be the use of employer-oriented flexibility. The use of employer-oriented flexibility, increases the number of problems a company faces even when we control for employee-oriented flexibility and economic situations, in addition to when we do not control for them. Thus, even if the company is in a good or very good economic situation and uses much employee-oriented flexibility, if it also uses much employer-oriented flexibility, the company will face many HR related problems.

Box 6-1. The performance outcome of “flexibility for both” component

In chapter 3, our first factor analysis outcome resulted in a three component outcome see Table 3-4, where we could distinguish *flexibility for both*, in addition to the employee-oriented and employer-oriented working time components found. For several reasons we have concluded with the two component outcome rather than the three component outcome, see chapter 3 for more detail. However, it was also mentioned that the significance of this third component, flexibility for both, would be if there were to be differences in the performance outcomes of the three different types of component. We have also tested the impact of working time components on company performances, based on the three factor method. The results show that even the *flexibility for both* component increases the total number of problems faced in the company, even when other company characteristics are taken into account. However, this effect is lower than what is found for employer-oriented working time component.

Country variance in the effect of working time flexibility

The next question in our analysis was whether or not there are country level variances in the effect of the two different working time flexibility components. For this we run a multilevel random slopes regression model that allows for country variance random effects of the use of the two working time components. The results of the analysis show that there is in fact some variance across European countries on the effect of

both employee- as well as employer- oriented working time flexibility on the number of problems a company has.

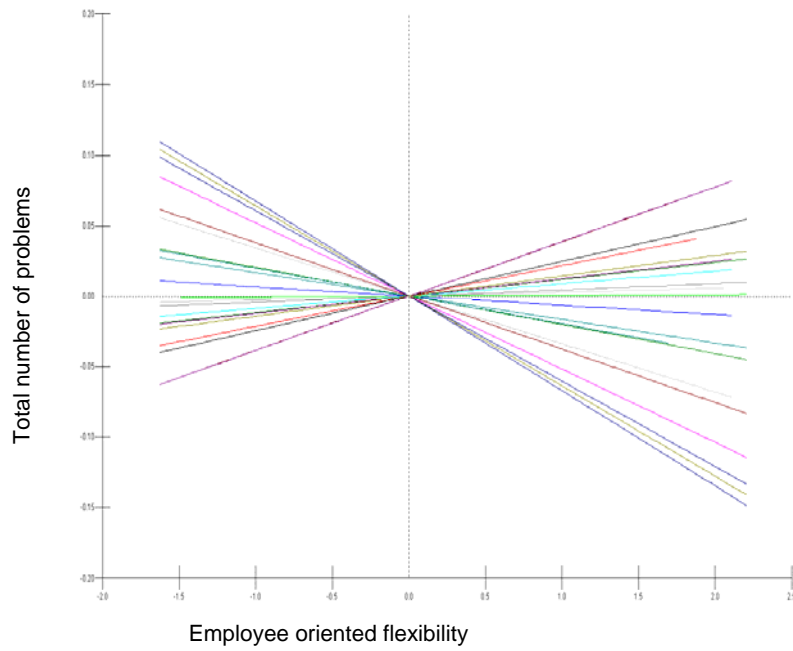


Figure 6-3. Cross-national variance of the effect of employee-oriented working time flexibility on the number of problems a company faces

Note: Each line represents the relationship found per country. If there were to be no variation, we would find one line in the graph.

As we see from Figure 6-3, there are significant country differences between the effects employee-oriented working time flexibility has on the total number of problems a company faces. Although in the European average one can find an insignificant negative relationship, as shown in Table 6-2, in countries such as UK, France, and Belgium, the negative effect of using employee-oriented flexibility is significantly stronger than that of the European average. Finland, Ireland, and Latvia also show negative relationship between employee-oriented flexibility use and total number of problems, but they were not statistically different from the European average. In Greece, there is a positive effect that is significantly different from the European average. Also in the case of Hungary, Sweden, Portugal, and Poland, one could see a slight positive relationship. In other words, in countries such as Greece

and perhaps in Hungary, Sweden, Portugal, and Poland, the use of employee-oriented working time arrangements will increase the total number of problems faced in the companies.

As for the effect of employer-oriented flexibility components, all countries have the same effect, thus more employer-oriented working time flexibility a company uses, the more problems it would have. This confirms the robustness of the relationship found. In the case of the UK this effect is even stronger and shows a statistically significant difference from the average effect found for Europe.

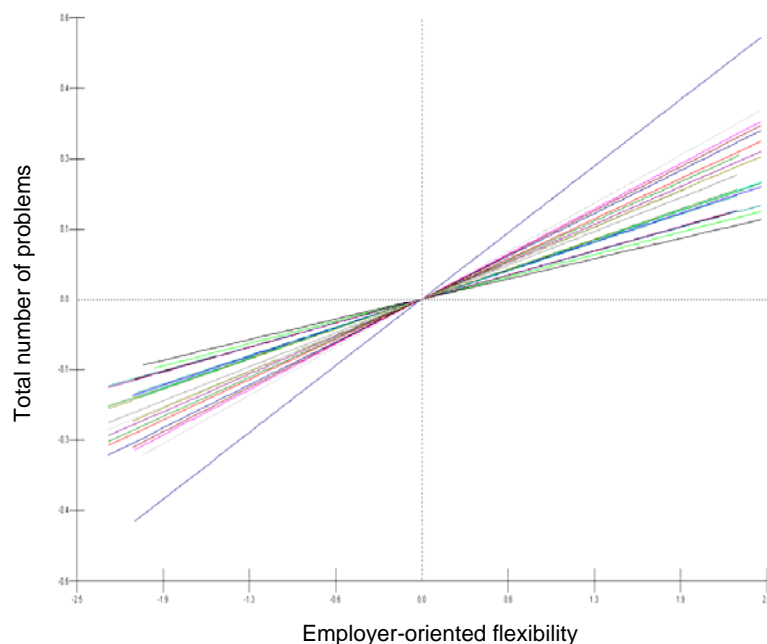


Figure 6-4. Cross-national variance of the effect of employer-oriented working time flexibility on the number of problems a company faces

Note: Each line represents the relationship found per country. If there were to be no variation, we would find one line in the graph.

On the other hand, there were no country variances in the effects employee- and employer-oriented flexibility on the economic situation of the company. For the specific problem issues, there were no country variances on the effect of the two working time components with the exception of the case of the effect of employer-

oriented flexibility use on the probability of having other problems, where there was a slight difference between countries.

Sector differences in the effect of working time flexibility components

Another aspect analysed was the sector variances in the effect of using one or the other working time flexibility component. Here we test this out by using an interaction term as shown in model (6.2).

Table 6-5. The variance between sectors in the effect of employee-oriented working time flexibility on the number of HR problems a company faces

	Total number of problems	
Variable	coefficient	
Employee-oriented WTFC	- 0.041	**
Employer-oriented WTFC	0.115	***
INTERACTION TERMS with Employee-oriented WTFC		
Construction	0.054	*
Education	0.080	*
Electricity, gas and water supply	- 0.009	
Financial intermediation	0.045	
Health and social work	0.001	
Hotel and restaurants	0.077	*
Mining and quarrying	0.007	
Other services	0.121	**
Public administration	0.084	**
Real estate	0.005	
Retail, repair	0.024	
Transport	0.053	

* represents those significant at the 90% confidence level, ** at the 95% level, and *** at the 99% level

Two-level multilevel model with country constant variance (significant for all models)

The company level variables that were controlled for can be found in section 3 of this chapter.

As we can see from the analysis result shown in Table 6-5, the effect of employee-oriented working time flexibility component becomes significant – negative, after including an interaction term with the sectors and employee-oriented flexibility, unlike the model without the interaction term, where it was insignificant. In other words, in sectors such as Manufacturing, Electricity, gas and water supply, Financial

intermediation, Health and social work, Mining and quarrying, Real estate, Retail and repair, and transport, the more employee-oriented working time arrangements the company has, the less HR related problem it has. However, this is not necessarily true in sectors such as, Construction, Education, Hotel and restaurants, Other services, and Public administration. In these sectors, there is either no effect or even a positive effect. This means that in these sectors when other things are held constant, including the amount of employer-oriented flexibility the company has, increasing the amount of employee-oriented flexibility does not decrease the number of HR related problems it has, and sometimes even increases the probability of having them. Especially in sectors such as Other services, and somewhat Public administration, and Education, it may be the case that the more employee-oriented flexibility there is, the more problems the company may face.

Table 6-6. The variance between sectors in the effect of employer-oriented working time flexibility on the number of HR problems a company faces

	Total number of problems
Variable	coefficient
Employee-oriented WTFC	- 0.011
Employer-oriented WTFC	0.064 ***
INTERACTION TERMS with Employer-oriented WTFC	
Construction	0.004
Education	0.043
Electricity, gas and water supply	- 0.079
Financial intermediation	0.077
Health and social work	0.117 **
Hotel and restaurants	0.064
Mining and quarrying	0.261 ***
Other services	0.079
Public administration	0.090 ***
Real estate	0.172 ***
Retail, repair	0.078 ***
Transport	0.015

* represents those significant at the 90% confidence level, ** at the 95% level, and *** at the 99% level

Two-level multilevel model with country constant variance (significant for all models)

The company level variables that were controlled for can be found in section 3 of this chapter.

When we add the interaction term of employer-oriented working time flexibility component with sectors, the average size of the effect employer-oriented WTFC decreases to almost half, however, still showing a significant positive effect. In addition, we can find some sectors where the effect of having employer-oriented working time arrangements are much stronger than what one finds for the reference sector in the model, which is the Manufacturing sector. These sectors include Health and social work, Mining and quarrying, Public administration, Real estate, and Retail and repair sectors. This is especially true for Mining and quarrying where the size of the effect is four times the effect found in the Manufacturing sector. All in all, we can see that unlike the effect employee-oriented flexibility, the effect employer-oriented flexibility has on the total number of problem the company faces is stable across sectors, and we find a significant positive relationship.

Skilled and female proportion and the effect of employee-oriented flexibility

Lastly, we examine if the proportion of skilled workers and female workers within the company affects the size of the effect employee-oriented flexibility has on decreasing the number of HR related problems. In both cases, this was not the case and there were no added effect in companies where they employed more skilled workers or female workers.

4.3. Summary

In this chapter the effect of working time flexibility on performance issues was examined. Here performance outcomes was measured divided into the direct effect working time practices has on HR related problems, and the indirect effect it can have on the overall economic situation of the company. From the previous studies and theories we have set the hypothesis that the use of employer-oriented working time flexibility will increase HR related problems, thus decreasing productivity and putting companies in bad economic situations. On the other hand, we predicted that the use of employee-oriented working time flexibility will decrease the probability of companies having HR related problems, thus increasing productivity and putting companies in better economic situations.

The results of the analysis show that indeed the use of employee-oriented working time arrangements is associated to lower chances of the company having various HR related problems, especially related to recruiting and retaining workers. However, it could also increase the chances of having other types of problems, not specified in the survey. For this reason, the use of employee-oriented working time flexibility does not have much influence in decreasing the total number of problems, especially when controlling for the use of employer-oriented flexibility. This is also the case when controlling for the economic situation of the company, thus when the companies are in bad economic situations, the use of employee-oriented flexibility do not decrease the chances of facing HR related problems. It is more likely that companies in better economic situations have more room to take up employee-oriented flexibility, which will decrease the company's chances of facing several aspects of HR related problem, when the company does not use much employer-oriented flexibility. This will, in turn, place the company in a better economic situation.

On the other hand, employer-oriented flexibility was associated with having higher chances of having problems in every aspect of the HR problem issues addressed in the survey, as well as having problems in "other issues". Hence, companies that use employer-oriented flexibility also had more problems than the companies who did not use much employer-oriented flexibility. This relationship was stable even when the use of employee-oriented flexibility, as well as the economic situation was controlled for. In other words, even in companies in 'good' or 'very good' economic situations, the use of employer-oriented flexibility could be linked to more problems faced within the company. In addition, even the use of employee-oriented flexibility does not help much in decreasing the number of problems, when the company uses a lot of employer-oriented flexibility. The use of employer-oriented flexibility does not seem to be directly linked to the company's economic situation. It is more likely that employer-oriented flexibility affects economic situations of the company indirectly through increasing the number of HR related problem, which is strongly related economic situation of the company.

The cross-national variance of the relationship between the uses of working time practices with performance was also examined. The results show that there are differences between country in the relationship between the use of employee-oriented working time flexibility and the total number of problems the company faces. In countries such as UK, France, and Belgium, the negative relationship between the two was much stronger. Thus in these countries, the use of employee-oriented flexibility helped in decreasing the number of HR-related problems faced within the company much more than in other countries. Whereas in countries such as Greece, Hungary, Sweden, Portugal, and Poland, the companies that use employee-oriented flexibility are likely to have more number of problems within the company, although this relationship is not always statistically significant. For other countries, the use of employee-oriented working time flexibility either did not make much difference, or were slightly helpful in decreasing the number of problems faced in the company.

In comparison, there was not much cross-national variance in the direction of the effect of employer-oriented flexibility. Only UK stands out above the other countries, with a much stronger positive effect of using employer-oriented flexibility on the total number of problems. In other words, in the UK the use of employer-oriented flexibility has much more of a negative impact on HR related issues than in other countries included in the survey. Unlike the number of problem the company faces, there were no country variances in the effect of employee-, employer-oriented WTFC on economic situation of the company, nor were there cross-country variances in the effect the WTFC had on specific problem issues faced.

The effect of the use of the two different types of working time practices also showed cross-sectoral differences. Although in the average effect found for the use of employee-oriented flexibility there was a non-significant negative effect on the total number of problems, this was not the case for some sectors. In Manufacturing, Electricity, gas and water supply, Financial intermediation, Health and social work, Mining and quarrying, Real estate, Retail and repair, and the Transport sectors, the use of employee-oriented flexibility did significantly decrease the number of HR related problems faced in the company. However, in sectors such as Construction, Hotel and restaurants, Education, Public administration, and Other services, this was

not the case. There were no significant relationships found, or in the latter two sectors one could even expect a relationship where the more employee-oriented flexibility the company uses the more problem it faces.

In the relationship between the use of employer-oriented working time practices with the number of HR problems, we have also found significant cross-sectoral variances. The effect of employer-oriented flexibility in the Manufacturing sector was not as strong as the average effect found for all sectors. This was because in sectors such as Retail and repair, Public administration, Health and social work, Real estate, and Mining and quarrying, the relationship was much stronger than the average. In other words, although in the other sectors, the increase of the score of employer-oriented flexibility by 1 will increase the number of problems faced in the company by 0.06, for example, in the Mining and quarrying sector, it will be increased by 0.26, thus having a four times larger effect.

Lastly, unlike the hypothesis set in the previous studies and in the beginning of the chapter, the proportion of skilled workers or female workers in the company did not increase the power of the effect of the working time practices.

5. Conclusions

In this chapter, we explored on the topic of various performance outcomes employee-, and employer-oriented working time practices can have within the company. The outcomes show that the use of employee-oriented working time flexibility brings less HR related problems, thus bringing better economic situations. However, taking a closer look, we see that this relationship is not true for all problem aspects, not in all economic situations, not for all countries, and not for all sectors. Thus we see much sectoral, country, and as well as company variance in this relationship. On the other hand, employer-oriented flexibility brings more HR related problems, thus bringing worse economic situations for the company. This effect is so strong that the positive effect of the use of employee-oriented flexibility disappears when the company uses much employer-oriented flexibility. After taking a closer look, unlike the case for

employee-oriented flexibility, this holds true for all problem aspects, in all economic situations, for all countries, and for all sectors, although the strength of the relationship is stronger in some sectors and for some countries.

There are different implications in using different working time practices that is used to fulfil the needs of employers and for employees. Although working time practices that are provided to respond to the needs of employees may be costly in the beginning periods, they are helpful in tackling various problems, especially in relations to recruitment and retaining workers. This then reduces the number of problems faced in the company, which will then affect the overall economic situation of the company. On the other hand, the working time practices that are for the needs of employers to adapt to business cycles, although they may be helpful in bringing in short-term profits, the use of such arrangements bring about problems in many aspect such as sickness, absenteeism, recruiting, retaining workers, keeping them motivated and other problems. These increases in problems may in the longer-term be damaging to the overall economic performance of the company.

Relating to the works done in the previous chapters, we can draw a vicious and virtuous cycle concerning these relationships. Companies in better economic situations are more likely to use more employee-oriented flexibility, thus bringing less problems, which brings better economic performance, which then puts companies in better economic situations, which puts companies in a position to use more employee-oriented flexibility. On the other hand, companies may use more employer-oriented flexibility to overcome their bad economic situation, which actually will bring on more HR related problems, which will in turn bring bad economic performance, and thus putting companies in bad economic situation.

To test if the change in the use of working time practices may change the relationship cycle from vicious to virtuous, from virtuous to vicious, the use of working time practices and the number of problem the company is facing was examined separately for different economic situations. It is shown that companies in bad economic situations, the use of employee-oriented working time flexibility does not significantly reduce the number of problems, thus putting doubts on the possibilities of shifts from vicious to virtuous cycles. On the other hand, even in good

or very good economic situations, the use of employer-oriented flexibility will increase the number of problems faced in the company, which shows that there can be a shift from virtuous cycle to a vicious cycle through the use of working time practices.

From these results we can conclude that it may not be as easy to say that family-friendly worker-life balance policies always provide good results in regards to HR problem issues. As we have seen this relationship depends on not only the country and sector we are talking about, but also the (economic) situation the company is in as well as what other types of flexibility the company is using. On the other hand, the argument that employer-oriented working time arrangements brings problems concerning HR issues has been proven to be correct and this relationship holds for all countries, all sectors and all companies in various economic situations.

The cross-national and cross-sectoral variance of the relationship found for employee-oriented flexibility and performance outcomes shows us the danger of presenting a general theory that could explain the relationship for all countries, sectors etc. As we have seen there are differences between not only countries, but also sectors, and also certain company circumstances, and sometimes they show opposite results in different settings. Thus, we cannot rely on one all encompassing theory but have to try to grasp the diversity of the relationships that actually exist, and try to understand the reasons behind it.

Relating to this point, there are some issues still not yet tackled in this chapter. Firstly, although we have found that there are cross-national variances in the relationship between the use of the two types of working time flexibility with performance outcomes, we have not yet examined why this is the case. Thus further investigation is needed to find the reason behind this difference between countries. The same holds true for the sectoral differences. We must test various sectoral characteristics to find why in some sectors employee-oriented flexibility practices work, while not in others.

Secondly, the performance outcome of each specific working time arrangements can also be examined to see if there is a particular arrangement is

driving the result. What we have tested here is the performance outcome of the use of a working time component, which grouped similar types of working time arrangements together. However, it may be the case that within the group of arrangements, there may be few arrangements that have stronger effect than others, or it could also be that within the same grouping there are different and maybe opposite effects. Of course the cross-national and cross-sectional effect of these relationships should be examined as well.

Lastly and most importantly, to test the true impacts of the working time practices on performance outcomes, one must examine longitudinal data across time. For more robust results, especially on issues such as the virtuous and vicious cycles addressed here, we must have time dimension in our data. This would allow us to see how the use of arrangements at an earlier time point can result in performance outcomes at a later time point. With cross-sectional data, such as our data set, the ESWT, this is not possible. For such analyses, one would require a company level panel data that includes information on performance, may it be subjective or objective indicators, as well as the information on the use of various working time flexibility arrangements. However, we do not have such data that is cross-nationally comparable.

Chapter VII. Summary and Conclusion

1. Introduction

Increasingly working time flexibility is gaining attention for its possibility in facilitating the needs of both employers and employees. In addition, over the years more and more people have recognized the importance of examining company level practices especially when examining labour market flexibility and work-life balance policy issues. Despite this attention, there is not much empirical work done on working time flexibility which focuses on company practices, especially those that compare cases across a large number of countries. This study is an attempt to overcome this limitation, through examining the determinants and implications of the use and provision of working time flexibility arrangements of companies across Europe.

Two specific approaches are taken in this study. Firstly, labour market flexibility is examined in a much broader sense in comparison to other studies, including flexibility needs of workers as well as those of companies. As companies adapt to business cycles and facilitate their needs, workers adapt to their life course needs through the use of labour market flexibility arrangements. Working time flexibility is a good focus to examine flexibility in such a manner, as this type of flexibility, in principle, can be used for both employers' and employees' needs. Secondly, this study took the 'flexible firm' approach, in which, various flexibility arrangements are examined not separately but in combination with other arrangements as bundles, representing a certain firm strategy or latent characteristics of flexibility. This strategy is taken so that it is possible to examine working time flexibility in a more holistic manner, compared to other studies where working time arrangements are examined as separate entities.

Another particular aspect of this study is that it focuses on the company level. The company level is important when examining labour market flexibility issues for various reasons. Firstly, only companies and individuals can be flexible, or be in flexible states. Thus, to measure flexibility levels of countries or sectors, one must

investigate the behaviours of individuals and companies (for more see Chung and Wilthagen, 2008). Secondly and somewhat connected to the first point, to examine what is truly made available to workers in terms of working time practices, one must examine the company level. Companies set out the possibility and limits of what employees can make use of (Reidmann et al., 2006:1). This is especially true when we consider that company practices of flexibility do not always reflect what is set in the national institutions through law or policies. Companies act rather autonomously in regards to provision of policies that provide flexibility and security to its workers (Bredgaard and Tros, 2008). However, despite this importance of company levels, few studies on company practices of flexibility have compared several countries. We are able to overcome this problem, and gather information on the company practices of their use of various working time arrangements through the use of the ESWT (European Survey on Working Time and Work-life Balance) 2004/2005 data set, a cross-national European wide company level data set made available by the European Foundation.

The purpose of this study was to explore the key issues regarding company practices of working time flexibility, rather than focusing on one question. The four key topics of this study set in the beginning of this study are as follows. The first topic of interest of this study was how company-level working time practices in Europe can be examined in a more holistic manner. Most studies concerning working time arrangements focus on one or a few arrangements separately, in isolation, or examine the actual hours worked. However, our interest was in examining the use of various working time arrangements in combination. Based on the methods used in other fields of labour market research, we suggest examining working time arrangements as bundles, using the concept of working time components. Thus, our first research question was whether working time flexibility arrangements are separate entities or can be examined as bundles of working time flexibility? And, if there are bundles, what latent characteristics can define these bundles?

The next questions asked in the project were related to explaining the variance found in employer- and employee-oriented working time practices across European companies, and their respective implications in terms of company performance

outcomes. One of our main interests was whether differences between countries account for a larger proportion of the observed variance than differences between companies within countries. This brings us to our second question, do countries differences explain most of the variance found between companies in terms of their working time practices, and if not what are the company characteristics that explain the between-company variance? In addition, if there are variations that can be attributed to the country level, what may explain such country differences? Here, we were especially interested in the roles institutions play, due to the policy implications this may have. Lastly, we examine the various implications of the use of working time arrangements with regard to human resource related problem issues but also overall performance of the company.

Through the results of the four substantive research questions examined in this study, we are able to map out the picture of working time flexibility of European companies like the one in the Figure 1-2 (repeated from the introduction chapter). Note that by the use of multilevel modelling we were able to not only examine the relationships for the average company within Europe, but also for cross-national variances in the various relationships found in the figure below, which is another innovative step in academic research in this field.

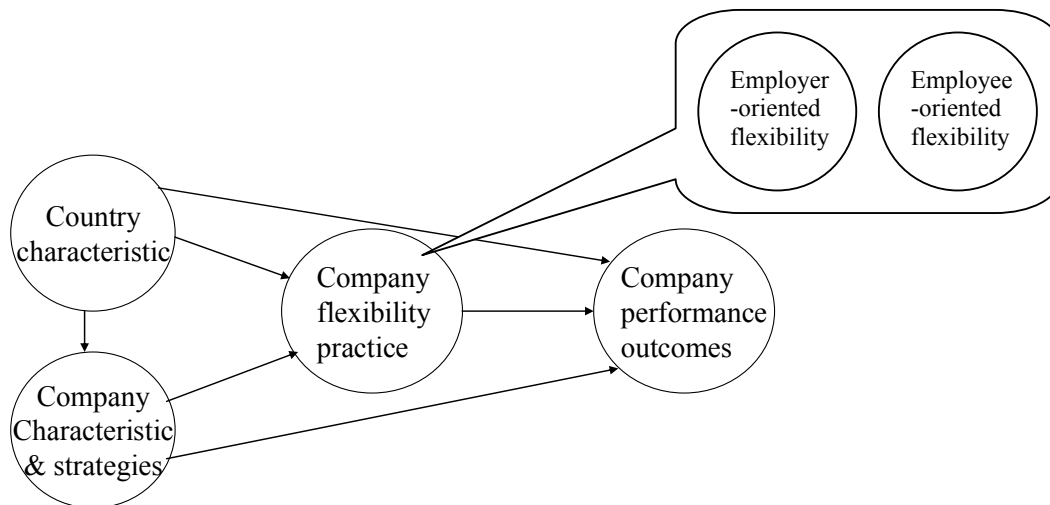


Figure 1-2. Framework of thesis, the determinants and implications of company flexibility practices (repeated from chapter 1)

2. Summary of findings

In this section, we summarize the findings and conclusions of each chapter in more detail.

2.1. Working time components: Flexibility for employers and employees?

Chapter 3 explores the possibility of examining working time arrangements not as separate entities but as bundles of arrangements, through the use of factor analysis. Despite the abundance of literature on working time, most studies have been restricted to examining the actual hours worked, or in examining one or only few arrangements as separate entities. The limitation of this approach is that the arrangements are examined isolated from the package of working time strategies, where arrangements are used in combination. One of the reasons for this single arrangement approach is the lack of a commonly recognized method in which the arrangements can be examined in combination. The following questions were examined in this chapter. Can working time arrangements be grouped as bundles? What latent characteristics and working time strategies do these bundles represent? What are the relationships between these bundles of arrangements, are they in a linear continuum or are they dichotomous categories? The respective hypotheses set for these questions were as follows.

Hypothesis 1-1: Working time flexibility arrangements can be bundled into components.

Hypothesis 1-2: The grouping of arrangements is based on whose needs they facilitate, thus those for employers versus those for employees.

Hypothesis 1-3: The components of flexibility are not points of a linear continuum but rather dichotomous.

Before the analysis, we examined which of the variables are of relevance to the purpose of the study, for the variables included in the analysis will drive the outcomes. The variables chosen for our analysis include part-time work, right to reduce working hours, phased retirement, flexible working hours, leave for care, leave

for education, leave for other purposes, overtime, unusual hours, and shift work. Through the use of varimax rotation solution of the Principle Components Analysis, we find two main components grouping the working time arrangements. The components represent whose needs the arrangements facilitate, notably, the needs of employees or the needs of employers. In addition, it seems that the flexibility needs for employers and employees are not necessarily placed on a linear continuum, at either conflicting ends, but are more likely to be separate dimensions. Thus, flexibility is not just a single dimension concept, where more flexibility for employees automatically means less flexibility for employers and vice versa. Nor can flexibility be measured in terms of just more or less flexibility. There are separate two dimensions one should consider in regards to working time flexibility, the employee-oriented flexibility and the employer-oriented flexibility, and both can be used in combination.

Examining the average country scores for the 21 countries included in the analysis, we find a positive relationship between the average scores for employee-oriented working time component and the average scores for employer-oriented working time component. Thus in countries where the average company provides more employee-oriented working time arrangements, the average company is more likely to use more employer-oriented working time arrangements as well, in comparison to other countries. We have also tested the stability of the factor analysis outcome by examining the factor analysis per country and per industry, then comparing it to the result where companies from all European countries and all sectors are included. Although the country and sector specific factor analysis results slightly deviate from the pan-Europe, pan-industry results, the naming of the derived factors as employee-oriented and employer-oriented working time components holds rather stable. In conclusion, the hypotheses set in this chapter cannot be rejected. We find that firstly, working time arrangements can indeed be grouped into bundles. Secondly, the most dominant latent characteristic that divides the bundles is the employee-orientation and employer-orientation of the working time arrangements. Thirdly, we also find that the components are of two different dimensions and not necessarily within a linear continuum where they are at odds with each other.

2.2. Determinants of working time practices: Do countries matter?

In chapter 4 and 5, the determinants of companies' working time practices were explored. Based on the results from chapter 3, companies' working time practices are examined in working time component scores, i.e., the employee-oriented working time flexibility component, and the employer-oriented working time flexibility component. A key focus of chapter 4 was to examine the extent to which countries explain company flexibility practices, in comparison to sector and other company level characteristics. Another aspect of interest in this chapter was the way in which company characteristics may have different implications in different countries. Thus the research questions for this chapter can be formulated as, 1) do countries account for most of the variance found between company practices of working time flexibility? 2) What kinds of company characteristics determine the working time practices, and are there cross-national variations in these effects?

Many studies on the labour market presume that although variations can be found across countries, the behaviours of actors within the country are rather homogenous. This is due to the presumption that individuals and companies are restricted within the country due to their institutions, culture, and other societal factors. However, this is not necessarily the case when we are dealing with the issues of labour market flexibility. Labour market flexibility arrangements can be developed or taken up by companies or individuals as a coping mechanism to overcome the restrictions of the environment, i.e. the country characteristics. In addition, companies and individuals all have different needs and demands which lead to the use of flexibility arrangements. Thus, we believe that one could find variation within countries between companies in regards to labour market flexibility practices. Also, based on previous studies we assume that there are several observable company characteristics that can account for the variance in the needs and capacity to introduce flexibility arrangements, and therefore account for the use of it. Thus, our main hypothesis set for this chapter was as follows.

Hypothesis 2: Country differences do not explain the majority of the variance found in the working time practices across European companies, and large differences can be found between companies within countries.

Hypothesis 3-1: There are several company level characteristics, such as its size, line of business, composition of its workforce, its industrial relations aspects, work load fluctuations etc., which can explain the use of various working time flexibility bundles.

Some company characteristics impact the use of working time practices in different manners in different countries. In other words, some company characteristics can be positively linked to the use of working time practices in some countries, whereas it can be negatively linked to, or have no impact on the use of working time practices in other countries. Thus we came to the following hypothesis.

Hypothesis 3-2: There is cross-national variance in the effect of various company level determinants on working time practices.

These hypotheses are tested by using a multilevel random effects regression model. The first model is a three-level model, thus company, sector, and country each being one level. This allows us to examine the variance of each level to see to the proportion countries take up from the total variance. Secondly, a two-level model was used, company as level one and country as level two, which included various company characteristics as well as sector as a level one predictor. This model allows us to not only see the effects of various company level characteristics on the working time component scores, but also examine cross-national variance (random effects) of the company level determinant on the flexibility component scores.

The outcomes of this study show that being within a certain country is indeed an important factor in explaining the differences between companies in taking up flexibility options. Countries explain up to 1/5 of the total variance, however, the effect is smaller for the employer-oriented working time components. The variance between companies within a country is much larger, and compared to country and company levels the differences between sectors within countries are rather small. In addition, the variance between companies within countries is different for each country. In other words, in some countries the variance is not as large as in others. For employee-oriented working time components, the variance between companies within countries varies considerably by country. The variance is smaller in countries where

the average score is also low. For employer-oriented working time components, the amount of variance found within countries does not differ much from country to country.

Of the company level characteristics, along with sector, the size of the company, the composition of its work force, work load fluctuations, the existence of working time agreements, the presence of employee representatives, the provision of work-life balance facilities, and the economic situation of the company, were all influential factors in explaining the extent to which companies use working time arrangements. What we can see here is that although there were many characteristics that increase the use of both types of working time components, we can see some characteristics having opposite impacts on the two type of working time components. Lastly, there seem to be country differences not only in the average scores of working time components, but also in the way various company characteristics explain the use of working time arrangements. Here we find that the effect of being a public company on the score of working time component seemed to vary between countries. In most EU-10 countries, public companies provide more employee-oriented working time arrangements, or there were no visible public-private divide. In some of the southern European or new-accession countries private companies, however, provided more employee-oriented working time arrangements. For employer-oriented arrangements, it seems like on average public companies use more employer-oriented working time arrangements in some countries, while in others there were no distinct public-private divide. Overall, the first two hypothesis of this chapter cannot be rejected, since there are larger variances between companies within countries, and several company level characteristics can explain between-company variances in the practices of working time. In addition, as predicted in the third hypothesis, we found a significant cross-national variation in the effect of being a public sector company.

2.3. Country determinants of working time practices: Do institutions matter?

The fifth chapter of this study examined the reason behind the cross-country variance found in the fourth chapter. Thus the key question asked in this chapter is: why do companies in different European countries behave differently in their use of working time arrangements? The main focus here was to investigate whether institutions matter, in comparison to other socio-economic and cultural country characteristics. We chose labour market institutions as our focus, since they have been the main suspects seen to decrease labour market adaptability and flexibility of welfare states. In addition, they are most likely to allow changes through policy implementation. We examine whether institutions do make such a difference as expected.

Hypothesis 4: Labour market institutions can account for the cross-national variance in the use of working time flexibility arrangement bundles, more than other country characteristics.

This chapter builds on the multilevel analysis performed in chapter 4, that is, the two-level multilevel model, with the effect of company level characteristics allowed to vary across countries (random slope). In this chapter, country level (level two) characteristics are added on to the model. OECD and Eurostat data sets were used to derive country level characteristic variables. Using a multilevel model, we are able to include both country level as well as company level variables into the model simultaneously, to examine the effects of characteristics on both levels at the same time, and to examine the separate country differences. This entails that we are explaining the difference between companies across countries, when other characteristics of companies such as sector, size, composition of its workforce, and others characteristics are controlled for. In other words, the model explains the differences between working time flexibility practices of European companies, when it is presumed that all other characteristics of the company are equal, and the only difference is that they are located in different countries. In addition, we can also see what country level characteristics can explain the level one random effect found in the previous chapter, thus the cross-country difference of the effect of being a public company on the use of the two different types of working time components. The country characteristics examined here are institutional factors, such as strictness of labour market institutions, centralization of bargaining, union strength, as well as

economic structure and situation of the country, i.e., unemployment, globalization, deindustrialization, and size of the public sector, and cultural aspects, such as gender regime of the country.

The results show that institutions as well as market structures and situations, and gender regimes are all important for explaining the cross-national variance found in the company practices of working time flexibility. In the case of explaining the level one random effect, that is, the cross-national variance of the effect of public companies, the country characteristics included in our study do not seem to change the relationship much. Overall, labour market institutions, including employment protection legislation, union strength, and collective bargaining structures, are significant factors that explain the country differences found in the way their companies make use of various working time arrangements. However, labour market situations and structures, such as unemployment situations, globalization trends, deindustrialization and women's participation in the labour markets were also important in explaining working time flexibility practices. More importantly, it seems that the institutions have a significant impact, when the combined effects with each other and with other country characteristics are considered. Thus, it is the combination and interaction of several institutional factors within certain cultural and economic situation and structures that enable or drive companies to take up various working time arrangements. We accept our fourth hypothesis that institutions do explain the use of working time components of European countries. However, it cannot be said that it is more important than other factors, such as labour market structures, situations, and cultural aspects of society. One other issue we have observed is that the influences of the institutions are not in a single direction, and not all institutions obtrude the development of flexibility. We have seen that union density and centralisation of bargaining have different effects on the two working time components, and the impact the two types of institutions work in different directions. Countries with stronger unions and decentralised bargaining systems have on average higher employee-oriented working time component scores, and those with weaker unions in centralised bargaining systems have higher employer-oriented working time component scores.

2.4. Performance outcomes of working time flexibility components: What is it good for?

The final issue addressed in this study is the performance outcomes of the two components of working time flexibility. If there are indeed two different types of working time components, and they are used in different types of companies as well as different countries, what are the implications of the use of such components? Thus, our research question in the chapter is: what are the performance outcomes of the different working time flexibility components?

In several previous studies, the use of work-life balance arrangements has been linked to better performance in many aspects, which prove to be profitable to employers as well as benefiting employees. These benefits include less stress and sickness, reduced absenteeism, improved morale, improved recruitment and retention, which lead to enhanced overall productivity. Employer-centred working time flexibility arrangements on the other hand, has been linked to the rise of various problems concerning health and safety, despite the fact that it is usually introduced in companies to tackle problems or to enhance direct profitability. Based on these studies concerning the use of working time arrangements and performance outcomes, we came to the following hypotheses.

Hypothesis 5-1: The use of employee-oriented working time flexibility arrangements can be linked to better results in company performance in regards to human resource related issues, and due to this, better results in terms of overall productivity and economic performances.

Hypothesis 5-2: The use of employer-oriented working time flexibility arrangements can be linked to worse results in company performance in regards to human resource related issues, and due to this, worse results in terms of overall productivity and economic performances.

In this chapter, performance outcomes include not only economic outcomes but also other issues related to human resources, such as absenteeism, sickness, motivation of workers, recruitment, and retaining workers. The relationship between the use of

working time components and performance outcomes is hard to decipher, since the direction of the relationship as such is not clear-cut. In other words, the variables that have been indicated as outcomes in this study, are not necessarily results of the use of working time practices. The outcome variables can be endogenous to the firm's other human resource management related behaviours, or they could be the reasons companies had to take up the working time arrangement in the first place. In addition, it is hard to say how the flexible working practices in themselves will result in certain outcomes, without taking other managerial and production practices into consideration. However, we can still loosely link the performance indicators of the firms with their working time flexibility practices to infer their possible impacts, especially given the results of the previous studies from different sources.

In addition, due to the differences in country and sector characteristics, the average numbers of problems faced in an average company differs between countries and sectors. Every country and every sector has different needs as well as potential problems, due to the nature and situation they are in. Similarly, as found in chapter 3 to 5, there are also differences in the average scores of working time components per country and sector. Thus, the differences in the component scores will entail different levels of company involvement in different countries, as well as in different sectors. This led us to believe that there can be country and sector variances in the relationship found between the use of working time flexibility arrangements and performance outcomes. Thus, we predicted a cross-country and cross-sector variance in the impact of working time components on performance outcomes. From this, we derived additional hypotheses.

Hypothesis 5-3: The relationship between the use of working time arrangements and performance outcomes varies across countries

Hypothesis 5-4: The relationship between the use of working time arrangements and performance outcomes varies across sectors.

Here we examine both the bi-variate and multi-variate relationship between the working time component scores and performance indicators. For the multi-variate model, a two-level, multilevel regression model was used. The first model includes

the working time component scores, as well as possible company characteristics that may affect companies' performance outcomes, as level-one independent variables. In this way, we can find the effect of the two types of working time flexibility components on the performance measures, having controlled for various company characteristics, such as sector, size, workforce composition, existence of an employee-representative, and being a headquarter or a subsidiary. Also, we examined the cross-national and cross-sectoral variance of the relationship between the use of working time component and performance outcomes, the former through the use of a random slope multilevel model, and the latter through the use of interaction terms in the model.

Outcomes, from both the bi-variate and multi-variate analyses, show that companies that use more employee-friendly working time flexibility arrangements fare better in terms of recruiting both low- and high-skilled workers, however, they may have more "other problems" than the average company. On the other hand, companies that use more employer-oriented working time flexibility arrangements are likely to have problems in all aspects of human resource related problems measured in this survey. This includes sickness and absenteeism, recruiting both high and low-skilled staff, motivating and retaining workers, as well as "other problems", which in total increases the number of problems faced in these companies. Further analysis was done to examine the cross-national and cross-sectoral variance of the effects found. The results show that for the employee-oriented working time component, the relationship found between the component score and the number of human resource problems faced within a company depended on the country and the sector in question. Thus in some countries and/or some sectors using more employee-oriented working time arrangements did significantly decreased the number of problems faced, whereas in others one could see a significant increase in the number of problems or no effects whatsoever. On the other hand, in all countries and all sectors, the use of employer-oriented working time component increased the number of human resource related problems faced by a company. The only variation found was the extent to which this was the case; however, the direction of the relationship stayed rather stable.

3. Conclusions and policy implications

From our study several implications could be presented, for policy makers as well as researchers in the fields of labour market research.

3.1. Employee-oriented versus employer-oriented flexibility

Firstly, this study has provided a new approach in examining working time flexibility, which allows for a more holistic view on working time arrangements. This approach has examined working time arrangements in terms of working time components, through the use of factor analysis/principle components analysis of relevant variables. The concept and methodology used in finding working time components could be used in the fields of labour market research, as a simple method that increases the holistic view on issues concerning not only working time flexibility but other flexibility or labour market issues.

In addition, we have shown that there are two types of working time components, namely the employee-oriented working time flexibility and the employer-oriented working time flexibility. Although these dimensions of flexibility are not altogether new, this study is one of the few studies that have provided empirical grounds for such a theoretical distinction. In addition, this new way of perceiving flexibility differs from previous studies and approaches, which consider flexibility as a one dimensional concept that measures only more or less flexibility. Here it is argued that flexibility is multi-dimensional, and it is important what type of flexibility is being developed. Especially when we take the different implication the two types of flexibilities have into account, it is crucial to include such a distinction when measuring flexibility. In addition, one should always keep in mind the fact that the two flexibility components are not at either end of the spectrum, but are two different dimensions that can be used in combination.

Concerning the outcomes of the two working time components, we have found evidence of a vicious and a virtuous cycle of performance. In chapter 3, we have found that companies in good economic situations were more likely to provide more

employee-oriented working time flexibility, even when other things are taken into consideration. In chapter 6, we find that the use of employee-oriented working time flexibility decreases the probability of having various human resource related problems in the company, and that having less human resource related problems has a positive effect on the overall economic situation of the company. On the other hand, companies in bad economic situations are more likely to use employer-oriented working time arrangements, although this relationship is statistically insignificant when other factors are taken into account. The use of more employer-oriented working time arrangements for companies is strongly linked with a high probability of having various human resource related problems, thus increasing the total number of issues faced within a company. This then increases the chance of the company being in a bad economic situation, even when other factors, which may influence the economic situation of the company, are taken into account. Thus, all in all we find some signs of a vicious and a virtuous cycle. On the one hand, we have companies, that are in better economic situations, being able to provide better work-life balance arrangements for their workers, which decreases the probability of facing several human resource related problems, which enhances productivity and thus put the company in a better economic situation, which could allow even further introduction of work-life balance arrangements. On the other hand, we see companies that are not in such good economic conditions, thus unable to provide work-life balance arrangements, but use employer-oriented working time flexibility. Employer-oriented working time arrangements could be detrimental to worker's working condition, and increase various problems in the fields of human resource. This then has a negative impact on the economic situation of the company, putting the company yet again in a situation where they try to overcome such problems by introducing arrangements that could be cost-efficient in a short-term perspective, possibly with adverse long-term consequences. These virtuous and vicious cycles can be represented as shown in Figure 6-2(repeated from chapter 6).

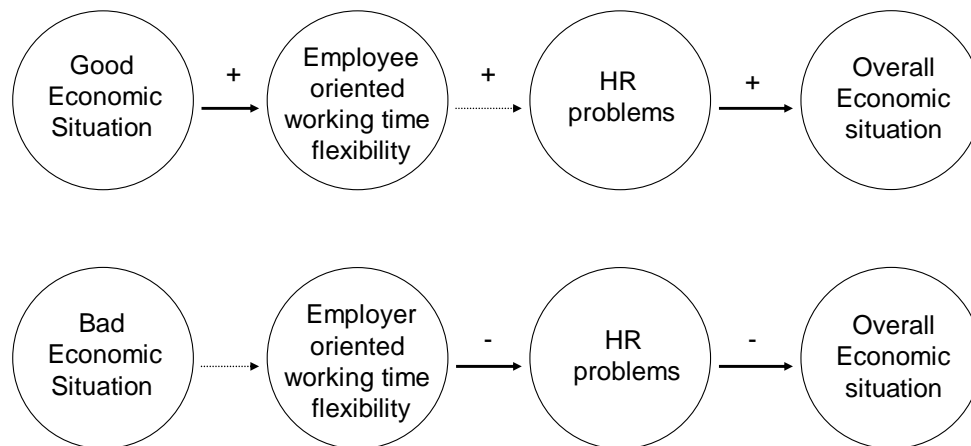


Figure 6-2. Virtuous/Vicious cycle of working time practices and performance(repeated from chapter 6)

Note: the darker lines represent statistical significance in the relationship when other variables are taken into consideration.

Another aspect to note is that, although employee-oriented flexibility decreases the number of problems faced in a company, when employer-oriented flexibility is used with it, this positive effect ceases to exist. Thus, the positive effect of employee-oriented working time flexibility seems to be not as strong as the negative effect employer-oriented working time flexibility on the number of problem it can create. The possibility of a shift from a vicious to a virtuous cycle, and vice versa, has also been tested. What has been found is that, it is highly likely that in bad economic situations the use of employee-oriented flexibility does not help much in decreasing HR related problems for the company. On the other hand, even in companies in good economic situations, the extensive use of employer-oriented flexibility is likely to increase the human resource related issues. In other words, extensive use of employer-oriented working time arrangements creates the possibility of a shift from a virtuous to a vicious cycle.

This conclusion has an important implication for policy makers both at the national levels and the company level, especially in the current economic crisis. The message the outcome of this study sends to corporate policy makers is that for longer-term profit generation it may be wiser to provide employee-oriented working time

flexibility to workers. Also, the excessive use of employer-oriented working time flexibility, although it may provide direct profitability, is likely to cause problems in the longer-term. This is not to say one should and could substitute employer-oriented flexibility with employee-oriented flexibility, for the two types of arrangements are not necessarily functional equivalents and are used for different purposes.

For national level policy makers, it may be helpful to consult and advise companies on the use of employee-oriented arrangements. This could include a cost-benefit analysis, to promote the provision of such arrangement within companies initiated at the company level. Providing a business case for the introduction of such policies may help companies introduce more family-friendly work-life balance policies, by changing the views of managers on why family-friendly policies should be used in companies. In addition, it may be helpful to provide financial support for the provision of employee-oriented working time arrangements for companies who do not have the financial capacity to engage in such policies. Especially when taking the conclusion made in chapter 4 and 6, i.e., concerning the diversity of company practices within the country, and the rather low impact of countries' institutions compared to what was thought once to be the case, it may be a better idea to promote policy initiation at the company level, which could be done in closer link with the direct needs of workers. These developments, however, should not interfere with the development of worker's rights to request various working conditions, such as flexible working as well as leaves for parenthood, care and other needs, at the national or sectoral levels. It should also be noted that there is a risk that too little regulation may end up with employee's interest not being protected sufficiently. Rubery and Grimshaw (2003) note that, "in countries with little regulations of working time, employers establish flexibility on their own terms, in more regulated systems, flexible arrangements tend to reflect a closer balance of interests between employers and workers" (Rubery and Grimshaw, 2003: 191).

This study also provides implications for policy makers in the company, on the use of employer-oriented working time flexibility. What has been made clear in this study is that no matter which country and which sector, the use of, or the extensive use of employer-oriented flexibility practices will lead to problems in the human

resource related areas. Not only are they harmful in themselves, when such arrangements are used, the positive impact employee-oriented working time practices are lost. Thus the use of such employer-oriented working time arrangement, that is shift work, unusual hours, and over time, should be taken with severe caution keeping in mind the consequences they may have. Companies may still choose to use such arrangement due to circumstances which do not leave any other option. However, they will also have to make sure to address the problems that come with the use of such arrangements, in order to achieve longer-term productivity and economic outcomes. As shown, just by providing more employee-oriented arrangement in these cases, at least those examined here, will not suffice in tackling the problems that may arise from the use of employer-oriented arrangements.

3.2. Importance of company level

Secondly, this study has provided a strong empirical critique on the presumption of similarity in flexibility practices within countries. Previous studies focus on the cross-national variation in the way flexibility is used, which is largely based on the assumption that the people and companies within the countries act rather homogenous. The result of our study suggests otherwise. There seem to be large variations within countries between companies in the use of working time arrangements, both the kind that are used to help workers balance work and life, as well as those which are taken up to meet the demands of business. This implies that there are other factors that come into play when companies make use of working time flexibility policies, other than the national context, may it be institutional or cultural or other socio-economic factors. This result is a re-confirmation of the conclusions by other studies on company policies on work-life balance provisions (Den Dulk, 2001; Evans, 2001) and flexicurity (Bredgaard and Tros, 2008).

This result also has implications for policy makers. Firstly, when developing policies to enhance flexibility, may it be for workers or for companies, we cannot presume we are tackling a homogenous group within each country. Companies and individuals act differently according to their needs and wishes, exactly because

flexibility is somewhat of an adaptation method. The diversity of flexibility behaviours of companies within countries also has implications for the impact of policies. If policies and institutions were to define flexibility behaviours of companies within countries, there would be more homogeneous behaviours among companies. However, we have found that this is not the case, and institutions, albeit influential to some extent, do not drive the behaviours of the companies. This conclusion could lead us to a pessimistic view of what national level policy makers can do to ensure good flexibility practices within the nation state. If there were no national level impacts, the role of national level policy makers would become redundant. This is not necessarily true. As we have seen in chapter 6, there is still some room for policy, not only in terms of the actual labour market policies but also by setting the negotiation structures. For example, from the results of chapter 6, we can see that the combination of decentralised bargaining and strong unions result in more employee-oriented working time practices provision. Similarly, the national level could act as a facilitator for such developments in corporate policies, while making it easier for companies to provide various types of good flexibility practices as well as giving individuals rights to request such practices within the company context, as mentioned in the previous section of this chapter.

As companies play a major role in the flexibility practices, it is important to see what types of companies provide and use the two different types of flexibility arrangements. As we have seen in Table 4-1 of chapter 4, there are some company characteristics that determine the flexibility practices that cannot be changed. These structural characteristics, such as the line of business, the company is in, whether or not it is a public company, and the size of the company are all influential factors but they are not characteristics that could be changed, at least not in the shorter-term. Workload variation and economic situations, are also linked to the market or the business cycle and thus can not be changed. For worker composition, it is more likely that companies use various working time practices to recruit or maintain certain workers, or lack particular groups due to the use of certain working time practices. Thus, the only relevant company characteristics that have implications for policy are agency variables, which are part of the company's human resource management, such as the use of collective agreement on working time and the existence of an employee

representative. As we've seen even when we control for other factors, the existence of an employee representative and the existence of a collective agreement on working time, both have positive impact on the use of both types of working time components. The two factors are probably related. Thus, the existence of an employee representative means that there is a body employers can negotiate with, on the use of various working time practices, making it easier to form collective agreements on such issues. Introducing the use of working time arrangements into collective agreements can also facilitate the use of various working time flexibility. However, having a collective agreement on working time may imply that the company is already using various working time arrangements, but later finds it necessary to formalize the arrangements used with a written agreement. Whichever the case, the positive link with the collective agreement and employee representative body implies that these two could be introduced as facilitators of working time flexibility.

3.3. Increase in female labour market participation

Another policy implication that needs to be addressed is the possibility of increasing female labour market participation with the introduction or the increased use of work-life balance employee-oriented flexibility arrangements. The increase in female labour market participation is an important issue in the European Community after the inclusion of the goal of raising female labour market participation up to 60% for all member states was stated in the Lisbon Agenda. The findings of our analysis in chapter 4 (Table 4-2 and Table 4-3) suggest a strong positive link between the proportion of female workers inside the company and the use of the employee-oriented working time component. In chapter 5 (Table 5-4 and Table 5-5), we can see that there is also a positive relationship of the female labour market participation of the country with the use of employee-oriented working time component. As noted in both chapters, this may have to do with reverse causality. When a company uses employee-oriented working time arrangements, which enhances work-life balance for workers, this may not only provide incentives for women to work inside the particular firm, but when many companies act similarly, this also provides incentives for women to work in general, to participate in the labour market. The former will increase the

proportion of women working inside the particular company, and the latter will increase the proportion of women inside the labour market of the country. This provides a new case for the introduction of employee-oriented flexibility within companies, although more research needs to be done for further conclusions.

3.4. The need for multilevel studies/cross-national variance of theories

This study makes use of multilevel modelling, a relatively new method in the field of sociology and social science. This method has provided us with some new insights in how we can examine social issues, and the way we derive theories from it. Through the use of the multilevel model, we are able to see that the relationships once thought to hold true for all countries and all sectors are not necessarily true. For example, we have shown in chapter 6 of this study, the performance outcomes of employee-oriented working time practices are positive in some countries and in some sectors, while not in others. In other words, some countries may benefit from the use of employee-oriented arrangements, whereas there is no benefit or even some harm for other countries. Similarly, in some sectors the use of employee-oriented working time arrangements may help tackle various issues, in other sectors it does not help much or even has the possibility of raising problems. In addition, different factors have different implications across countries in explaining the use of working time components. In chapter 4, we have found that the effect of being a public sector organisation, and to some extent the existence of collective agreements of working time and employee representatives, have different impact on the use of working time arrangements, depending on the country in question. Some countries public sectors provide more employee-oriented flexibility, whereas in others private sectors provide more. The same goes for employer-oriented flexibility.

This is contrary to what has generally been believed in the fields of labour market issues, where the relationship found was thought to be applicable for all countries and sectors. Although most studies examine how different countries have different starting points, or average scores on flexibility, the implications of flexibility and the impact of predictors of flexibility have been thought to hold true for all

countries. Thus Europe is diverse not only in the use of various working time practices, but also in the implications this may have, and what explains the prevalence of working time practices. In other words, there is no one-size fits all approach to flexibility (CEC, 2007a). All in all, we cannot show that one theory works for all countries and sectors. All countries, sectors, and even companies in these sectors are diverse in their ways of flexibility behaviours, which reflects the environment they are placed in, and accordingly the outcomes these behaviours produce. We cannot rely on one all encompassing theory but have to try to grasp the diversity of the relationships that actually exist, and try to understand the reasons behind it.

This is not an end of cross-national research but actually a strong argument that encourages further cross-national research, for as shown, the relationship found in one country cannot represent what is the case in others. The same goes for different sectors as well as companies with different characteristics. Thus one must try to reconfirm or test one's theory in different countries and in different environments.

4. Future research topics

There are some topics that could be investigated further, based on the findings of this study. In this study we have included company level characteristics and country level characteristics to find the company variance and country variance of the use of working time components (chapters 4 and 5). From the results we have seen that the cross-national variance of the impact of public companies cannot be explained by the country level variables examined in this study. Further research should examine more in detail what may explain this diversity. The reasons underlying cross-country and cross-sectoral differences in the implications of employee-oriented working time components also need further investigation. Why do some sectors and some countries benefit from the use of employee-oriented policies while others do not? Cross-national variance of the outcomes of working time components could be investigated by including some relevant country level variables into the model. For cross-sectoral variances, we can use the coefficients found as dependent variables to run another set regression models to see which sector characteristics can account for the differences

in the implications of working time components. The reason behind the sectoral variance found in the use of working time components in chapter 4, could also be found using a similar method.

Some of the conclusions drawn on the impact of country as well as company characteristics on the use of working time arrangements also warrant further research. The vicious and virtuous performance cycles of working time components could be tested further to see if this is driven by a specific sector or country. The issue of female labour market participation or gender regime impact on the use of employee-oriented flexibility is another issue to be examined further. Here we have used overall female labour participation rate as a proxy to measure gender regimes. However, this could be elaborate further to distinguish between full-time versus part-time female labour market participation regime types as well as including the male participation patterns. In addition, we could include other cultural variables not only on gender regimes but also other aspects that could be of interest to test their impacts on working time practices, using various value surveys that cover cases across Europe. The same goes for other aspects investigated here. Many of the results here are exploratory and can be considered preliminary results that measured rough proxies for various country characteristics. More in-depth analyses would help to come to more concrete conclusions for theoretical inferences.

Additional tests could be done on different data sets concerning working time practices, to further examine the robustness of our results. For the findings in chapter 6 on performance outcomes, the results, especially on the virtuous and vicious cycles, could be made stronger if we were to test this theory using longitudinal data on establishment practices. For a more valid finding on performance outcomes of the use of working time practices, one must have company level panel data, which includes information concerning the performance outcomes as well as the use of various flexibility practices in different time points. This would allow us to see how the use of arrangements at an earlier time point can result in performance outcomes at a later time point for the same company.

Another important aspect that has not been addressed but could be investigated further is the issue of the extent to which the arrangements are being used. In this

study, due to the limitation of information available in the ESWT data set, we are only able to examine the dichotomous variable, the use of various working time arrangements. If we were able to examine the extent the arrangements were being used, we would be able to distinguish between the companies that use few arrangements but in an extensive manner, to those that use several but not extensively. However, the possibility of doing such analysis is heavily reliant on the data available.

Finally, the dimensions of flexibility measured here could be tested further on individual data, also by county and sector to test its validity. In chapter 3, some of these robustness tests were carried out, however, we could use other data sets, of establishments from both national data sets, cross-national data sets, as well as individual level data sets, to further ensure the robustness of the result.

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English Summary

Increasingly working time flexibility is gaining attention for its possibility in facilitating the needs of both employers and employees. In addition, over the years more and more people have recognized the importance of examining company level practices especially when examining labour market flexibility and work-life balance policy issues. Despite this attention, there is not much empirical work done on working time flexibility which focuses on company practices, especially those that compare cases across large number of countries. This study is an attempt to overcome this limitation, through examining the determinants and implications of the use and provision of working time flexibility arrangements of companies across Europe.

Two specific approaches are taken in this study. Firstly, labour market flexibility is examined in a much broader sense in comparison to other studies, including flexibility needs of workers as well as those of companies. As companies adapt to business cycles and facilitate their needs, workers adapt to their life course needs through the use of labour market flexibility arrangements. Working time flexibility is a good focus to examine flexibility in such manner, for reasons that it is the type of flexibility that, in principle, can be used for both employers' and employees' needs. Secondly, this study takes the 'flexible firm' approach, in which, various flexibility arrangements are examined not separately but in combination with other arrangements as bundles, representing a certain firm strategy or latent characteristics of flexibility. This strategy is taken so that it is possible to examine working time flexibility in a more holistic manner, compared to other studies where working time arrangements are examined as separate entities.

Another particular aspect of this study is that it focuses on the company level. The company level is important when examining labour market flexibility issues for various reasons. Firstly, only companies and individuals can be flexible, or be in flexible states. Thus, to measure flexibility levels of countries or sectors, one must investigate the behaviours of individuals and companies. Secondly and somewhat connected to the first point, to examine what is truly made available to workers in terms of working time practices, one must examine the company level. Companies set out the possibility and limits of what employees can make use of. This is especially

true when we consider that company practices of flexibility do not always reflect what is set in the national institutions through law or policies. Companies act rather autonomously in regards to provision of policies that provide flexibility and security to its workers. However, despite this importance of company levels, there have not been many studies on company practices of flexibility that compared several countries. We are able to overcome this problem, and gather information on the company practices of their use of various working time arrangements through the use of the ESWT (European Survey on Working Time and Work-life Balance) 2004/2005 data set, a cross-national European wide company level data set made available by the European Foundation.

The purpose of this study was to explore the key issues regarding company practices of working time flexibility, rather than focusing on one question. The four key topics of this study set in the beginning of this study and are as follows. The first topic of interest of this study was how company-level working time practices in Europe can be examined in a more holistic manner. Most studies concerning working time arrangements focus on one or a few arrangements separately, in isolation, or examine the actual hours worked. However, our interest was in examining the use of various working time arrangements in combination. Based on the methods used in other fields of labour market research, we suggest examining working time arrangements as bundles, using the concept of working time components. Thus, our first research question was whether working time flexibility arrangements are separate entities or can be examined as bundles of working time flexibility? And, if there are bundles, what latent characteristics can define these bundles? Through our analysis, we find that working time arrangements can indeed be grouped into bundles. In addition, the most dominant latent characteristic that divides the bundles is the employee-orientation and employer-orientation of the working time arrangements. We also find that the components are of two different dimensions and not necessarily within a linear continuum where they are at odds with each other.

The next questions asked in the project were related to explaining the variance found in employer- and employee-oriented working time practices across European companies, and their respective implications in terms of company performance

outcomes. Of the explanations, one of our main interests was whether countries explain for the larger amount of variance found, or if there are larger variances found between companies within countries. This brings us to our second question, do country differences explain for most of the variance found between companies in terms of their working time practices, and if not what are the company characteristics that explain the between-company variance? This was tested through the use of a multi-level model. We find that there are larger variances between companies within countries, although the variance within country is different not only depending on the county but also the type of working time flexibility one is examining. Thus there seem to be larger differences between countries in the provision of employee-oriented working time flexibility, where as the between-company within-country variance was larger in the case of employer-oriented working time flexibility. There are several company level characteristics that can explain for between-company variances in the practices of working time such as, sector, size, composition of its work force, work load fluctuations, the existence of working time agreements, the presence of employee representatives, the provision of work-life balance facilities, and the economic situation of the company. However, the same company characteristics may have different effects depending on the country in question. We were able to examine this through the use of a multi-level approach, and we find that being a public sector company does have different even opposite effects on the use of working time flexibility in different countries.

The third question asked is what can explain for the country differences found in the practices of working time? Here, we were especially interested in the roles institutions play, due to the policy implications this may have. The results show that institutions as well as market structures and situations, and gender regimes are all important for explaining the practices of working time flexibility. More importantly, it is the combination and interaction of several institutional factors within certain cultural and economic situation and structure that enable or drive companies to take up various working time arrangements. One other aspect we discovered is that the impact of the institutions are not of a single direction, thus not all institutions obtrude the development of flexibility. It has been shown that union density and centralisation

of bargaining have different impacts for the two working time components, and the impact the two institutions have are of different directions.

Lastly, we examine the various implications of the use of working time arrangements with regard to human resource related problem issues but also overall performance of the company. Outcomes show that companies that use more working time flexibility arrangements that are favourable to employees fare better in terms of recruiting both low- and high-skilled workers, however, they may have more “other problems” than the average company. On the other hand, companies that use more employer-oriented working time flexibility arrangements are likely to have problems in all aspects of human resource related problems measured in this survey. This includes sickness and absenteeism, recruiting both high and low-skilled staff, motivating and retaining workers, as well as “other problems”, which increases the number of problems faced in these companies. However, we find that there were also some cross-national and cross-sectoral variances in this relationship. The use of employee-oriented working time arrangements significantly decreased the number of problems faced in some countries and some sectors, whereas in others no effect was found. On the other hand, in all countries and all sectors, the use of employer-oriented working time component increased the number of human resource related problems faced in a company. The only variation found was the extent to which this was the case, however, the direction of the relationship stayed rather stable.

There are several implications of this study for both research and policy. Firstly, this study has provided a new approach in examining working time flexibility, which allows for a more holistic view on working time arrangements, through the use of the concept of components. Furthermore, we have shown that there are two types of working time components, namely the employee-oriented working time flexibility and the employer-oriented working time flexibility. Concerning the outcomes of the two working time components, we have found evidence that suggests a vicious and a virtuous cycle paths of economic situation, use of working time components, having problems in the human resource related issues, and then that again effecting economic performance and situation of the company. The implication of this result for corporate policy makers is that for longer-term profit generation it may be wiser to provide

employee-oriented working time flexibility to workers. In addition, it also shows that using excessive amounts of employer-oriented working time flexibility, although it may provide direct profitability, is likely to cause problems in the longer-term. This is not to say one should substitute employer-oriented flexibility with employee-oriented flexibility, for the two types of arrangements are not necessarily functional equivalents and are used for different purposes. For national level policy makers, it may be helpful to consult and advise companies on the use of employee-oriented arrangements. Especially concerning the diversity of company practices within the country, and the rather low impact of countries' institutions compared to what was thought once to be the case, it may be a better idea to promote policy initiation from the company level, which could be done in closer link with the direct needs of workers. These developments, however, should not interfere with the development of worker's rights to request various working conditions.

Another policy implication that needs to be addressed is the possibility of increasing female labour market participation with the introduction or the increased use of work-life balance employee-oriented flexibility arrangements. We find that there is a strong positive link not only between the proportion of female workers inside the company with the use of employee-oriented working time component, but also between the female labour market participation of the country with the use of employee-oriented working time component. This may mean that when a company uses employee-oriented working time arrangements, which enhances work-life balance for workers, this may not only give the incentives for women to work inside the particular firm, but when many companies act similarly, this also provides incentives for women to work in general, to participate in the labour market.

This study makes use of multilevel modelling, a relatively new method in the field of sociology and social science. This method has also provided us with some new insights in the way we can examine social issues, and the way we derive theories from it. Through the use of the multilevel model, what we are able to see is that the relationships once thought to hold true for all countries and all sectors are not necessarily true. This is contrary to what has generally been believed in the fields of labour market issues, where the relationship found was thought to be applicable for all

countries and sectors. All countries, sectors, and even companies in these sectors are diverse in their ways of flexibility behaviours, which reflects the environment they are placed in, and accordingly the outcomes these behaviours produce. We cannot rely on one all encompassing theory but have to try to grasp the diversity of the relationships that actually exist, and try to understand the reasons behind it. This is not an end of cross-national research but actually a strong argument that encourages further cross-national research. One must try to reconfirm or test one's theory in different countries and in different environments.

The study ends with some notes on future research topics.

Nederlandse Samenvatting

De aandacht voor flexibele arbeidstijden heeft de afgelopen jaren een vlucht genomen gezien de mogelijkheden die het biedt om tegemoet te komen aan de wensen van zowel werkgevers als werknemers. Hiernaast hebben meer en meer mensen het belang onderkend van het onderzoeken van de praktijk binnen bedrijven, met name in het kader van onderzoek naar beleid omtrent arbeidsmarktflexibiliteit en de balans tussen werk en privé. Ondanks deze toegenomen aandacht is er slechts weinig empirisch onderzoek verricht naar de praktijk van flexibele arbeidstijden binnen bedrijven, met name grootschalige studies waarin bedrijven in verschillende landen worden vergeleken ontbreken. Deze studie beoogt dit hiaat op te vullen met een analyse van de determinanten en gevolgen van het beschikbaar stellen en gebruik van regelingen omtrent flexibele arbeidstijden in bedrijven binnen Europa.

Deze studie heeft een tweeledige aanpak. Allereerst is flexibiliteit op de arbeidsmarkt in een veel breder kader bestudeerd in vergelijking met andere studies, namelijk door de flexibiliteitsbehoefte van zowel werknemers als bedrijven in kaart te brengen. Terwijl bedrijven zich aanpassen aan de conjunctuur en hun daaruit voortkomende behoeftes faciliteren, passen werknemers zich aan aan de behoeftes die bepaalde levensfasen meebrengen door gebruik te maken van flexibele arbeidsmarktregelingen. Flexibiliteit in arbeidstijden is een goede focus om flexibiliteit te bestuderen omdat juist deze vorm van flexibiliteit in principe kan worden gebruikt voor zowel werkgevers- als werknemersbehoeften. Ten tweede hanteert deze studie het uitgangspunt van de ‘flexibele onderneming’, waarin verschillende flexibiliteitsarrangementen niet geïsoleerd van elkaar worden bestudeerd, maar juist als bundels samen met andere arrangementen, die vervolgens een zekere bedrijfsstrategie of latente flexibiliteitskenmerken weerspiegelen. Dit uitgangspunt is gehanteerd om een meer holistische benadering in het onderzoeken van flexibele arbeidstijden mogelijk te maken, in tegenstelling tot andere studies waarin flexibele arbeidstijdenregelingen als afzonderlijke eenheden worden bestudeerd.

Een ander specifiek aspect van deze studie is de focus op het ondernemingsniveau. Het ondernemingsniveau is om verschillende redenen belangrijk

voor onderzoek naar arbeidsmarktflexibiliteit. Ten eerste kunnen alleen bedrijven en individuen flexibel of in een staat van flexibiliteit zijn. Als gevolg moet men om flexicurity niveaus van landen of sectoren te meten het gedrag van individuen en bedrijven onderzoeken. Ten tweede, en gerelateerd aan het eerste punt, moet men het bedrijfsniveau analyseren om te onderzoeken wat werkelijk beschikbaar is voor werknemers in termen van arbeidstijden regelingen. Bedrijven stellen de mogelijkheden en beperkingen waarvan werknemers gebruik kunnen maken. Dit geldt vooral wanneer we in ogenschouw houden dat de praktijk van flexibiliteit binnen ondernemingen niet altijd exact weergeven wat er in nationale instituties door middel van wetgeving en beleid is vastgelegd. Bedrijven handelen in hoge mate autonoom met betrekking tot beleid omtrent flexibiliteit en zekerheid voor werknemers. Ondanks het belang van het ondernemingsniveau, zijn er desalniettemin niet veel studies naar bedrijfspraktijken omtrent flexibiliteit waarin meerdere landen worden vergeleken. Wij zijn in staat dit probleem het hoofd te bieden en informatie over bedrijfspraktijken omtrent gebruik van verscheidene arbeidstijdenregelingen te verzamelen op basis van de ESWT (European Survey on Working Time and Work-life Balance) 2004/2005 data set, een crossnationale Europees brede bedrijfsniveau data set beschikbaar gesteld door de European Foundation.

Het doel van deze studie was het onderzoeken van de kernelementen van bedrijfsbeleid omtrent flexibele arbeidstijden in plaats van een focus op een specifieke vraag. De vier kernelementen van deze studie die bij de aanvang waren vastgesteld waren als volgt. Het eerste interessante thema was hoe arbeidstijdenregelingen op bedrijfsniveau in Europa op een meer holistische manier geanalyseerd kunnen worden. Het merendeel van de studies over arbeidstijdenregelingen focussen op een of een aantal regelingen afzonderlijk en geïsoleerd van elkaar, of analyseren het aantal feitelijk gewerkte uren. Wij wilden echter het gecombineerde gebruik van verschillende arbeidstijdenregelingen onderzoeken. Op basis van de methodes die op andere terreinen van arbeidsmarktonderzoek gebruikt worden stellen wij voor arbeidstijdenregelingen te analyseren als bundels, door gebruik te maken van het concept 'arbeidstijden componenten'. Als gevolg was onze eerste onderzoeksvraag of flexibele arbeidstijdenregelingen aparte entiteiten zijn of geanalyseerd kunnen worden als bundels van flexibele arbeidstijden. En, als dergelijke bundels inderdaad bestaan,

door welke latente kenmerken worden zij gedefinieerd? Door onze analyse vinden wij dat arbeidstijdenregelingen inderdaad gegroepeerd kunnen worden in bundels. Bovendien laten de meest dominante latente kenmerken zien dat er een verdeling is in werkgevergeoriënteerde en werknemergeoriënteerde arbeidstijdenregelingen. Hiernaast vinden we dat deze componenten onderdeel zijn van twee verschillende dimensies en zich niet bevinden in een lineair continuüm waar zij elkaars tegenpool zijn.

De volgende vragen die in dit project gesteld zijn hadden betrekking op het verklaren van de variatie in werkgever- en werknemergeoriënteerde arbeidstijdenregelingen in verschillende Europese bedrijven, en hun respectievelijke implicaties in termen van prestaties van de onderneming. Van deze verklaringen was een die met name onze interesse had of landen het merendeel van de variatie konden verklaren of dat er grotere variaties te vinden zijn tussen bedrijven binnen landen. Dit brengt ons tot de tweede vraag, verklaren de verschillen tussen landen het merendeel van de variatie tussen bedrijven in termen van arbeidstijdenregelingen, en zo niet, welke bedrijfskenmerken verklaren de variatie tussen bedrijven? Dit is getest met behulp van een multi-level model. We vinden grotere variatie tussen bedrijven binnen landen, hoewel de variatie binnen een land verschilt afhankelijk van niet alleen het land maar ook van het type flexibele arbeidstijdenregeling die men onderzoekt. Er lijken aldus grotere verschillen te zijn tussen landen in het voorzien in werknemergeoriënteerde flexibele arbeidstijden terwijl de variatie tussen bedrijven binnen een land groter was in het geval van werkgevergeoriënteerde flexibele arbeidstijden. Verscheidene kenmerken op bedrijfsniveau kunnen de variatie tussen bedrijven in regelingen omtrent en gebruik van flexibele arbeidstijden verklaren. Dit zijn bijvoorbeeld de sector, omvang, samenstelling van het personeelsbestand, fluctuaties in de werkdruk, het bestaan van arbeidstijdenregelingen, de aanwezigheid van werknemersvertegenwoordigers, het voorzien in regelingen om werk en privé te combineren, en de economische situatie van de onderneming. Desalniettemin kunnen dezelfde bedrijfskenmerken verschillende effecten hebben afhankelijk van het land in kwestie. Dit kunnen wij vaststellen door middel van een multi-level aanpak, en we concluderen dat het feit dat een bedrijf zich bevindt in de publieke sector

verschillende en zelfs tegengestelde effecten kan hebben op het gebruik van flexibele arbeidstijden in verschillende landen.

De derde vraag die is gesteld is wat de verschillen tussen landen in de gebruikte arbeidstijdenregelingen kan verklaren? Hier waren wij specifiek geïnteresseerd in de rol die instituties spelen, door de gevolgen hiervan voor beleid. De uitkomsten laten zien dat zowel instituties als markt structuren, en beleid omtrent sekseverschillen allemaal belangrijk zijn om flexibele arbeidstijdenregelingen te verklaren. Nog belangrijker hierbij is het feit dat het de combinatie en interactie van verschillende institutionele factoren binnen een bepaalde culturele en economische situatie en structuur zijn die bedrijven in staat stellen of aansporen om verschillende arbeidstijdenregelingen te implementeren. Een ander aspect dat we ontdekten is dat de impact van instituties niet een bepaalde richting uitgaan, dus niet alle instituties dwingen tot de ontwikkeling van flexicurity. Het is aangetoond dat vakbondsgraad en de mate waarin collectief onderhandelen gecentraliseerd is verschillend kunnen uitwerken voor de twee arbeidstijden componenten, en de impact van deze beide instituties heeft een verschillende richting.

Tenslotte onderzoeken we de verschillende implicaties van het gebruik van arbeidstijdenregelingen in relatie tot human resource gerelateerde onderwerpen en tot de algemene prestaties van de onderneming. De uitkomsten laten zien dat bedrijven die meer gebruik maken van flexibele arbeidstijdenregelingen die gunstig zijn voor werknemers betere resultaten hebben ten aanzien van het aantrekken van zowel laag- als hooggeschoolde werknemers, hoewel zij meer “andere problemen” hebben dan de gemiddelde onderneming. Aan de andere kant hebben bedrijven die meer gebruik maken van werkgevergeoriënteerde flexibele arbeidstijdenregelingen een grotere kans om problemen te hebben in alle aspecten van human resource gerelateerde problemen die in deze enquête gemeten zijn. Deze omvatten ziekte en afwezigheid, het aantrekken van zowel hoog- als laaggeschoolde werknemers, het motiveren en vasthouden van werknemers, en “andere problemen”, die bijdragen aan een toename van het totaal aantal problemen waarmee deze bedrijven te maken hebben. Toch vinden we ook crossnationale en crosssectorale variaties in deze relatie. Het gebruik van werknemergeoriënteerde flexibele arbeidstijdenregelingen leidde tot een

significante afname van de problemen waarmee men in sommige landen en sommige sectoren te maken had, terwijl in andere geen effect gevonden werd. Aan de andere kant leidde het gebruik van werkgevergeoriënteerde arbeidstijden componenten in alle landen en alle sectoren tot een toename in het aantal human resource gerelateerde problemen waarmee een bedrijf te maken had. De enige gevonden variatie was de mate waarin dit het geval was, hoewel de richting van de relatie stabiel bleef.

Deze studie heeft een aantal implicaties voor zowel onderzoek als beleid. Allereerst biedt deze studie een nieuwe aanpak in het onderzoek naar flexibele arbeidstijden die een meer holistische benadering van arbeidstijdenregelingen toestaat door gebruik van het concept 'componenten'. Bovendien hebben wij laten zien dat er twee typen arbeidstijdenregelingen zijn, namelijk werknemergeoriënteerde en werkgevergeoriënteerde flexibele arbeidstijden. Ten aanzien van de uitkomsten van beide componenten van arbeidstijden hebben we bewijs gevonden voor een vicieuze en een 'virtueuze' cirkel in een economische situatie, het gebruik van arbeidstijden componenten, en het voorkomen van human resource gerelateerde problemen, welke vervolgens invloed hebben op de economische situatie en prestaties van de onderneming. De implicatie van dit resultaat voor beleidsmakers op ondernemingsniveau is dat het voor het realiseren van meer lange termijn winst verstandiger kan zijn om werknemergeoriënteerde flexibele arbeidstijden aan werknemers aan te bieden. Aanvullend laten de resultaten zien dat een excessief gebruik van werkgevergeoriënteerde flexibele arbeidstijden, hoewel het direct winstgevend kan zijn, kan leiden tot problemen op de langere termijn. Dit betekent niet dat men werkgevergeoriënteerde flexibiliteit moet vervangen door werknemergeoriënteerde flexibiliteit omdat de twee soorten regelingen niet noodzakelijk functionele equivalenten zijn en gebruikt worden voor verschillende doeleinden. Voor beleidsmakers op nationaal niveau kan het nuttig zijn om bedrijven te consulteren en adviseren omtrent het gebruik van werknemergeoriënteerde regelingen. Specifiek ten aanzien van diversiteit in het gedrag van ondernemingen binnen een land, en de relatief lage impact van instituties binnen landen in vergelijking met wat men dacht dat deze impact was, kan het beter zijn om beleidsontwikkeling vanuit het bedrijfsniveau te stimuleren, wat gedaan kan worden in meer direct verband met de behoeftes van werknemers. Deze ontwikkelingen zouden echter geen inbreuk moeten

maken op de ontwikkeling van het recht van werknemers om te verzoeken om verschillende arbeidsomstandigheden.

Een andere implicatie voor beleid die aandacht verdient is de mogelijkheid om de arbeidsmarktparticipatie van vrouwen te verhogen met de introductie of meer gebruik van werknemergeoriënteerde flexibele arbeidstijdenregelingen gericht op een betere balans tussen werk en privé. Wij vinden een sterk positief verband niet alleen tussen het aandeel vrouwelijke werknemers in een bedrijf en het gebruik van de werknemergeoriënteerde arbeidstijden component, maar ook tussen de vrouwelijke arbeidsmarktparticipatie van een land en het gebruik van de werknemergeoriënteerde arbeidstijden component. Dit zou kunnen betekenen dat wanneer een bedrijf gebruik maakt van werknemergeoriënteerde arbeidstijdenregelingen, die de balans tussen werk en privé voor werknemers vergroten, dit niet alleen een prikkel kan zijn voor vrouwen om in dat specifieke bedrijf te werken, maar dat wanneer veel bedrijven hetzelfde gedrag vertonen dit een prikkel kan zijn voor vrouwen om meer te werken in het algemeen, om deel te nemen aan de arbeidsmarkt.

Deze studie maakt gebruik van multilevel modelling, een relatief nieuwe methode in het veld van de sociologie en de sociale wetenschap. Deze methode heeft ons bovendien een aantal nieuwe inzichten opgeleverd omtrent de manier waarop we sociale kwesties analyseren en op basis daarvan theorieën formuleren. Door het gebruik van het multilevel model kunnen wij zien dat de relaties waarvan gedacht werd dat ze te vinden waren in alle landen en alle sectoren niet noodzakelijk waar hoeven te zijn. Dit in tegenstelling tot wat over het algemeen is gedacht op het terrein van de arbeidsmarkt, waar de relatie die werd gevonden relevant werd geacht voor alle landen en sectoren. Alle landen, sectoren, en zelfs bedrijven binnen sectoren zijn divers ten aanzien van hun flexibiliteits-gedrag dat een reflectie is van de omgeving waarin zij zich bevinden en diverse uitkomsten van hun gedrag tot gevolg hebben. We kunnen niet uitgaan van een alles omvattende theorie maar we moeten de diversiteit van de in de realiteit bestaande relaties proberen te vatten, en de verklaringen voor deze relaties proberen te begrijpen. Dit is geen doel van crossnationaal onderzoek maar eerder een sterk argument dat aanmoedigt tot verder crossnationaal onderzoek.

Men moet proberen om een theorie te bevestigen of te testen in verschillende landen en verschillende omgevingen.

De studie eindigt met een aantal beschouwingen over mogelijk toekomstig onderzoek.