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Do countries matter? Explaining the variation in the use of numerical flexibility arrangements across European companies using a Multi-level model

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**Abstract**

Do countries matter, especially compared to other aspects that affect the flexibility behaviours of companies? Many studies on the labour market assume that there are country differences, cross-national variances, and that it is a crucial factor in explaining the actual practices of the labour market by individuals and companies. The supposition is that although there are variations across countries, the behaviour of actors within the country is rather homogenous. Thus, due to country level characteristics, the actors within the country are seen to act similarly. This is due to the fact 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 actors are completely restricted within these boundaries. This becomes more evident when we are dealing with labour market flexibility options, for this can be developed (in companies or perhaps by individuals) as a coping mechanism to overcome the restrictions of society. This paper asks the questions, do countries matter, and to what extent it does matter and how it matters. It addresses this issue by first comparing the variance of each level under examination, that is, the country, sector and company level, through the use of a multi-level random effects model. The examination of the variance of each level will allow us to see to which extent countries matter. Also this model allows us to see how factors that explain the flexibility behaviours of companies show different effects across countries to answer the question how countries matter in an exploratory manner. The issue of flexibility is addressed uniquely in this paper in two aspects. Unlike many of the previous studies on this issue, this paper uses a broader definition of flexibility, thus, it perceives labour market flexibility as a method used for the needs of workers as well as those of employers or companies. In other words, as companies facilitate their adaptation to business cycles through labour market flexibility, workers adapt to life cycles through it. Based on this definition, flexibility practices used within companies can be measured two dimensionally, on one side its overall level and another to whom it is (more) geared towards. Also, unlike studies that focus on one or few specific arrangements, this paper does not examine various flexibility options as separate entities. It examines the practices as a whole, i.e. the use and the combination of various arrangements in achieving numerical flexibility. The data used here is the European Survey of Working-Time and Work-life Balance (ESWT) from the European Foundation of the Improvement of Living and Working Conditions. This survey covers 21000 establishments in 21 EU member states for the years 2004/2005. 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. However, the variance between companies within a country is much larger, especially when considering the flexibility options that are geared towards the needs of employers. Compared to country and company levels there are small differences between sectors within countries. Of the company level characteristics, size of the company, worker composition, industrial relation aspects, and variations in work loads were important determinants of the flexibility practices within companies. Also it seems that the effects of explanatory variables are different across the European countries. For flexibility options that are used for company's production needs being within certain sectors have different implications across countries. For flexibility options that are used for worker's work-life balance needs, industrial relations aspects of the company, thus the existence of working time agreements and employee representatives have

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different implications across countries. There seems to be a division with the EU 15 and the new accession countries in these effects where the relationship as well as the strength of the effect changes. There are some evidence that companies may use work-life balance options as incentives to recruit and maintain their skilled work force, as we can see the countries where labour force demand is strong the effect of proportion of skilled workers in the provision of flexibility options for workers is stronger, and visa versa. Also collective agreements on working time may help the use of various flexibility option for both worker's needs as well as company's needs, especially in countries where flexibility options are not widely and frequently used.

## 1. Introduction

Do countries matter, especially compared to other aspects that affect the behaviours of companies in regards to labour market flexibility? Many previous studies on the labour market are based on the assumption that there is a significant amount of differences between countries or cross-national variances, which is one of the, if not the most important factor that determines the behaviours or practices of individuals and companies. The early studies of labour market flexibility, where 'institutional restriction' or 'rigidities' were used to measure flexibility<sup>2</sup>, are examples of studies that are based on this assumption. They presume that institutions affect if not determine the behaviours of the actors within, and that although there are variations across countries, the behaviours of actors within the country are rather homogenous for this reason. This entails that being within the same country is more important in determining behaviours than being in the same line of business thus sector, being the same size for companies, being of the same sex for workers or other micro level characteristics of the actors involved. However, contrary to this line of thinking, actors are not necessarily restricted within the boundaries of the country it is in or its institutions. There can be more variance within a country and more resemblance among actors across countries due to similarities in other aspects. For example, big service sector firms may be more akin to each other throughout Europe, while within a certain country the differences between the behaviour companies of different characters are bigger. This becomes more evident when we are dealing with the issues of labour market flexibility options. If we consider the company level, it is possible that labour market flexibility arrangements are developed or taken up with discretion by companies as a coping mechanism or strategy to overcome the restriction of the society. With this in mind, this paper examines the question whether countries do really matter and to what extent being within a certain country actually does explain the flexibility practices in the more micro-levels in an exploratory manner. More specifically this paper examines the shop-level practices of numerical flexibility within firms to see to what extent country differences can account for the differences between companies. This is done through comparing the variance of flexibility practices of three different levels, the country level, sectoral level and the individual level. The variances are derived through using Multi-level model also known as random effect model, which allows for contextual analysis. This model also allows us to see how factors that explain the flexibility behaviours of companies have different effects across countries to answer the question how countries matter. Here we focus more on the industrial relations variables, as well as the effect of being within the public sector. The focus here is not to provide explanation for each of the different effects, but to examine this question in a more exploratory manner, to see to what extent countries do make differences in what ways.

The way labour market flexibility is addressed in this paper is unique in two aspects. Unlike many of the previous studies on this issue, this paper uses a broader definition of

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<sup>2</sup> For some examples, Pissarides, (1990), Layard, Nickell and Jackman (1991), Nickell (1997), Scarpetta (1996), Elmskov et al. (1998), Esping-Andersen (2000).

flexibility, thus it perceives labour market flexibility as a method used to facilitate the needs of workers as well as those for companies or businesses. In other words, just as companies adapt to business cycles through labour market flexibility, workers can and do adapt to life cycles and their changing work preferences through it. If we use this broad definition of labour market flexibility, thus also including the flexibility needs of workers into account, flexibility practices used within companies can be measured two dimensionally. It can be measured based on to whom the flexibility option facilitates, workers and/or the company, in addition to examining its overall level. Another unique aspect of this paper is that unlike most studies this study does not focus on one or few specific arrangements or examine various flexibility options as separate entities. It examines flexibility practice as a whole, i.e. the use and the combination of various arrangements in achieving numerical flexibility. This is based on the assumption that flexibility arrangements are actually not used as individual arrangements but are actually bundles of arrangements that are taken up as packages (see Chung, 2007; Chung et. al, 2007).

The data used here is the European Survey of Working-Time and Work-life Balance (ESWT) from the European Foundation of the Improvement of Living and Working Conditions. This survey covers over 21000 establishments in 21 EU member states for the years 2004/2005. This data provides us with valuable information on the behaviours of companies in their use and provision of various flexibility options that can be used both for establishments and for workers which were not available before.

The structure of this paper is as follows. Before we go in to the predictors of labour market flexibility, we first examine the definition of flexibility and critique how the literature only takes the companies' needs for flexibility into account. The way in which this can be modified is elaborated as well. Afterwards, the different levels in which flexibility can be examined and the relevance of the examining the company level is considered. Next, we will examine the various factors and levels that can affect the behaviours of companies in their use of flexibility arrangements and the effect of country level. Information on the ESWT data set and some descriptive analysis outcomes are given in section three. The outcomes of the multi-level regression analyses are given in section four and the paper ends with some conclusions and policy implications.

## **2. Flexibility and the company level**

### **2.1 Definition of Flexibility: a new framework**

Labour market flexibility is a somewhat abstract concept (Pollert, 1991) and its definition can vary across authors. In the early days of labour market flexibility, it was linked to "labour market rigidities" or "impediments", in which various labour market institutions were attacked as decreasing labour market flexibility (for example, Pissarides, 1990; Layard, Nickell and Jackman, 1991; Nickell, 1997; Scarpetta, 1996; Elmshov et al., 1998). Current literature offers several definitions but generally, labour market flexibility refers to the ability the labour market to adapt to changes in society, the economy and production cycles (Standing, 1999: 49).

Up till now, the focus of labour market flexibility has been more or less on how it is used for the needs of companies and businesses. However, the importance of increasing flexibility for the needs of workers is also gaining more grounds. The needs of individuals over their life cycle 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. As companies use flexibility to adapt to business and economic cycles, individuals should be able to work flexibility to adapt to changing needs through out their life cycles. Thus by means of increasing and decreasing working hours – including long and short leaves - individuals can adapt to the "rush hours" and "free hours" of life by using various flexibility arrangements. Examining the development of flexible work of different countries, Rubery and Grimshaw (2003) note that the trend

towards flexible working can be distinguished by two dimensions. Firstly the extent to which they use flexibility in full time work versus the use of part-time work, and secondly, the extent to which they take account of the interests of employers and employees. In addition, the exclusion of the 'worker-oriented flexibility' options in examining of labour market flexibility inhibits the development of flexibility arrangements that can be used to accommodate both employers and employees needs. The issue of increasing flexibility for workers is stated as one of the central objective stated in the European Commission's (EC) Employment Strategies since 1998 (EC 1998; 2007) and gaining even more grounds through EC's promotion of *Flexicurity* strategies<sup>3</sup>.

So what exactly is flexibility for companies and for workers and what options can be included in it? To understand this, we must first examine why companies or workers use or need flexibility measures. Here we focus in particular on numerical flexibility, an aspect of flexibility which has been addressed most frequently. The main reason that companies take up flexible working time arrangements is for the cost savings that they create. More specifically, companies can cut costs by quickly adapting the work force to fluctuations in business either through reducing workers or the hours the workers work (Houseman, 2001; Rubery and Grimshaw, 2003). Labour costs can also be reduced through fringe benefits/social security contributions cuts 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; Rubery and Grimshaw, 2003). Companies also use flexibility to adapt to staff absence due to leaves and absenteeism through use of temporary contracts or by using over-time of flexible schedules within the company. Screening new recruits before offering them with long-term contracts, improving quality and service, along with meeting supply needs such as customers' needs, are additional reasons why companies take up various flexibility arrangements (Houseman, 2001; Reilly, 2001; Rubery and Grimshaw, 2003). There can also be indirect motives for taking up flexible arrangements. Flexible working time arrangements and leave schemes can be used to accommodate workers working hours preferences and enhance loyalty or as a recruitment strategy to hire workers with special skills (Houseman, 2001; Plantenga and Remery for the European Commission, 2005).

On the other hand, what are workers' interests in taking up flexible working arrangements? Work-life balance, such as reconciling care and other responsibilities along with work responsibility, is one of the main reasons why workers need flexibility in their work (Reilly, 1998, 2001; Hill et al, 2001; Rubery and Grimshaw, 2003; Plantenga and Remery for the European Commission, 2005; Anxo et al. for the European Foundation, 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. Also, the increasing need for life-long learning, via training or education breaks, can be another motivation for taking leave or deviating from the standard work norm. But just like companies, workers also have indirect motives, such as maximizing income or improving job security. For instance, in companies with high overtime premiums, workers might have incentives to take up overtime work for extra income, or when taking up the given arrangement provides more job security, workers may be inclined to take up such arrangements (Reilly, 2001). In this sense, flexibility measures that provide workers with more lee-way to adapt to work and life issues provide security for companies. These securities for companies will be things such as of workforce recruitment, maintenance as well as skill and productivity maintenance. On the other hand, flexibility options for companies provide security for workers such as job, employment and further on income security. In reality the distinction whether an arrangement gives flexibility or security (or both) to workers and/or companies is not so simple. Country, sector, company and individual differences may all affect the exact motive for the taking up of a certain flexibility arrangement and what is provided by the arrangement. However generally, numerical flexibility, that is contractual flexibility and working time flexibility, may be divided as depicted in Table 1, based on their

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<sup>3</sup> An example of this is the Flexicurity communications published this year (EC, 2007: [http://ec.europa.eu/employment\\_social/employment\\_strategy/flex\\_meaning\\_en.htm](http://ec.europa.eu/employment_social/employment_strategy/flex_meaning_en.htm)).

provision of flexibility and security for workers and companies. Here it is indicated whether or not the flexibility arrangement *can* provide flexibility for one side or not. This does not however, mean that these arrangements always do provide it. For example, part-time work which is indicated here as being able to provide flexibility for both worker and companies, may also just provide flexibility for one but not for the other.

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

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

Based on Anxo et al. (2005) Monastiriotis (2007); Rubery and Grimshaw(2003); Plantenga and Remery, (2005); Chung (2007); Muffels et al.(forthcoming)

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 is possible that this is only the case when proper work life balance facilities are not provided, thus in some cases the voluntarily character of unusual hours can be questionable.

b) 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 been examined through job duration and not as a use of certain arrangement. Although some people might choose to work temporarily for personal reasons such as unwillingness to commit to one job, or being able to work for only a specified period such as students, this percentage is small and we disregard these cases here.

c) 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 included here.

## 2.2 Various levels of flexibility and the company

There are many levels in which flexibility can be examined, namely from the macro-national level to the micro-individual level. Using employment protection indexes, a frequented method up till recently, are a national and somewhat sectoral level indicator of labour market flexibility. Likewise, many studies on labour market flexibility have been focused more on the national country level indicators. However, 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 especially true when flexibility measures are implemented or taken up as strategic measures to overcome institutional restrictions within

countries<sup>4</sup>. This can be seen as discrepancies between the various levels in which flexibility can be examined, or the discrepancies between the *efforts and practices of flexibility*<sup>5</sup>. 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 for other factors come into play when companies choose their flexibility strategies and they can act rather autonomously from institutional environments (Bredgaard and Tros, in this book). Subsequently, we can expect similar behavioural patterns between companies in very different institutional environment, 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 possibly more the case for the organization of working time. Although leave schemes are usually decided in the national level, the regulatory framework of flexible working time is dealt more so in the sector level and the specifics of working time are often dealt in the company level. Also, employers are increasingly calling for decentralisation of working time bargaining to the company level (Keune, 2006).

**Figure 1: Various levels of flexibility analysis and focus of this study**

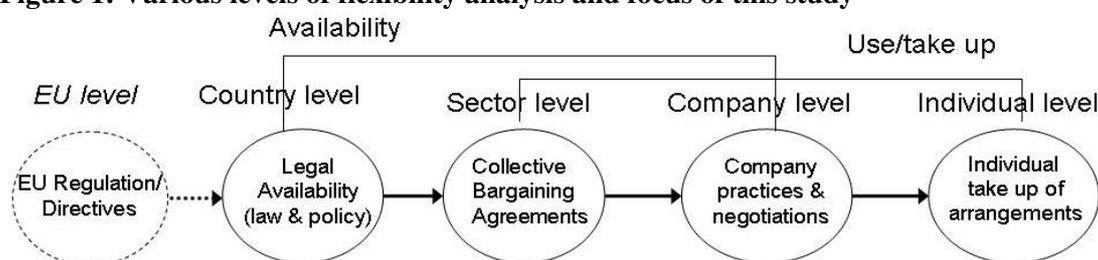


Figure 1 shows the various levels of flexibility, and how one sphere affects the next. At the further left there is the EU regulation, employment policies or EU directives on working time and leave schemes, which provides countries with the basic regulation that EU member states are expected to adhere to. Next come the national regulation within each country which affects the collective agreements made in the sector level. This in turn will affect what companies in each sector actually take up as practices in their firms and how they negotiate the use of working time arrangements with their employees. The practices of companies, that is, the use and/or provision of flexibility options within the company level are in fact the actual availability workers. Employees themselves in most cases cannot autonomously choose various flexibility options and are restricted to those which are used and provided within the companies they work in. In this sense we can see company level flexibility practices as the *final availability* of working time flexibility options for workers 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).

### 2.3 Determinants of working time organization in the company level

Why do companies differ in their practices of numerical flexibility? This may be due to national institutions, the sector they are in, or it may well be from the individual company characteristic, such as size, composition etc. Also, along with the national context, there may be a certain regime effect, in which clusters of countries show similar outcomes due to similarities in their systems. As we can see in Figure 2, the company characteristics can not be separated from the sector and the country level characteristics. The country will affect the sector within the country, as well as the company within it. As such there are interaction effects of various levels one can expect. In this section, we examine the various determinants

<sup>4</sup> For example literature shows 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).

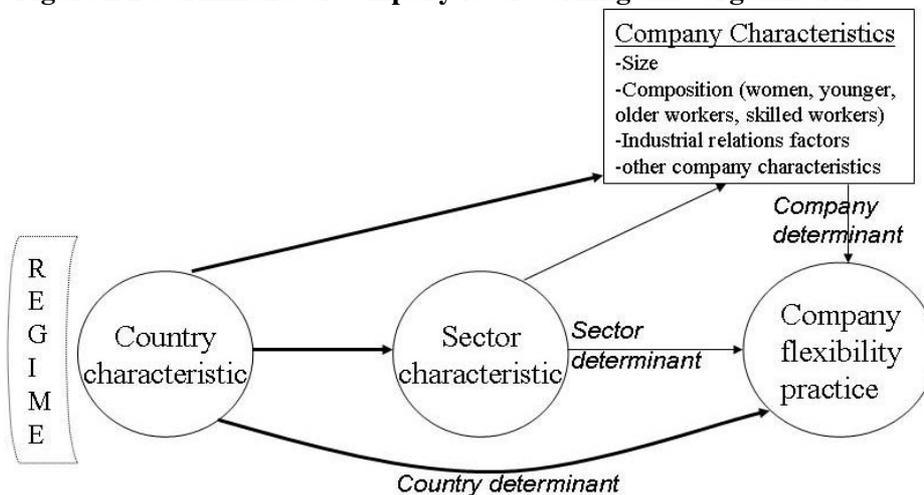
<sup>5</sup> For more see Bekker and Chung, 2007.

that can affect the way in which a company uses and organizes its working time arrangements. Based on the framework elaborated in the section two, we can distinguish three levels. These are namely, the company level, sector level and the country or further more regime level.

### 2.3.1 Country differences and company practices

The organization of working time within companies can be determined by country level institutional regulations. In other words, the various practices of working time of companies and the clusters of firms might be explained by countries' institutions, culture, political legacy, negotiations structures or other aspects that are country or regime cluster defined. There are several studies that have dealt with the country regime typologies including studies of welfare and employment regime typology (Esping-Andersen, 1990; 1999; Ferrera, 1993; Bonoli, 1997), typologies according to the gender division of work or care (Lewis, 1992; Ostner and Lewis, 1995; Gornick, Meyers and Ross, 1998; Sainsbury, 1999; Crompton 2001; Stier and Lewin-Epstein, 2001; MacDonald, 2004), flexibility typologies and working time typologies (Regini, 2001; O'Reilly and Spee, 1998; Schmid, 2002). Due to the fact that the focus of this study is not to find out what exactly about the countries make the difference between them, we do not go into detail on these theories here. However it is clear that there can be country differences due to several reasons. One other thing to note about the effects of countries is that there are indirect effects countries can have as well as direct effects. As we can see in Figure 2, there can be differences between countries in the effect of sectors and company characteristics. The same company and sectoral characteristics will have different implications in different countries thus affecting the company flexibility practices in different manners. For example, having high percentage of female workers may mean different things in different countries, where in one country it enhances the use of flexibility options for workers, while in others it decreases it. This is the indirect effect of country on the behaviour of companies, through sectors and through company characteristics. This indirect and direct effect of countries, which is the key issues raised in this paper, is depicted by the thick lines in the figure below.

**Figure 2 Determinants of company level working time organization**



### 2.3.2 Sector and company level characteristics and use of flexibility options

Other than the country variable, we can assume that various company characteristics will have an effect on the way working time is organized. Although regulations and institutions of working time shape the organization of working time of companies, companies are becoming more and more decentralized, thus increasing the variance between companies within the same country and sector (Messenger, 2004; Keune, 2006). The variation of the organization of working time might be affected by many things such as sector, size, composition, economic situation of the company etc. Due to the traits of the sectors, services

sectors are usually seen to need and provide more flexibility than industry sectors. Also, public sectors are seen to have more arrangements for work-life balance needs of workers than private sectors (Evans, 2002; OECD, 2001; Plentenga and Remery, 2005). Although bigger firms have more leeway in introducing different types of flexibility, smaller firms need various options to adapt to changes and while bigger firms have formalized arrangements smaller firms have informal arrangements which might be more efficient in providing various working time flexibility. Larger firms have more family friendly policies but when informal policies are taken into account, this effect diminishes. (Plentenga Remery, 2005: 74; OECD, 2001)

The proportion of women, older workers, and skill composition of the work force might be another aspect that needs to be examined. For example, some arrangements may be used more in companies which have higher proportion of women in their firms, such as part-time and parental leave. On the other hand, it is obvious that companies with higher proportion of older workers might have more retirement related arrangements. Also many working time arrangements could be introduced to attract skilled workforce into the establishments (Evans, 2002).

Examining the results of previous studies, we can see that there are common elements in explaining the use of various working time flexibility arrangements within firms. For example, for part-time work, it was shown establishments in public-sectors, service sectors, and is large-sized with feminized workforce tend to have more part-time work. On the other hand, age and skill composition of the firm was not shown to be significant when other variables are controlled for. Also in combination with the other working time arrangements, it was shown that companies with temporary contracts, unusual hours, and other flexible time arrangements, parental leave, and assistance for childcare services had higher chances of having part-time workers, while companies that used over-time had lower chances (Anxo et al., 2007a:61). Similarly, country, sector (service and public), size (larger companies) and workforce feminization were all major factors that explained the experience of parental leave in an establishment. Also companies which have shift work, night work, short-term contracts, flexible working time arrangements showed higher chances of having an employee on parental leave (Anxo et al., 2007b). For unusual hours as well, we can see that services industries, namely hotel and restaurants, and health and social work show high levels, while financial services, construction and education report the lowest levels. It is also shown 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 Lehdorff, 2007:32). Lastly early and phased retirement is more widespread in establishments which are larger, and in sectors such as health and social work, education and financial services. Establishments which have part-time work also have higher chances of providing phased retirement. Both schemes are offered more in establishments which uses flexible working time arrangements, night shifts or weekend shifts. The use of early retirement is influenced by the employment situation of the establishment and the need for reduction in the personnel. Also it is shown that establishments which offer early retirement have higher chances of offering phased retirement (Leber and Wagner, 2007).

Overall we can conclude that not only country, but sector, size, composition of the workforce all are deciding factors in whether an establishment uses a certain working time arrangement or not. In addition, as we can see from the case of early retirement, the economic or employment situation of the companies may also be another factor that might affect the organization of working time. Another factor that we examine in this paper is the various industrial relations aspects of the establishments. Negotiation structures are a deciding factor in the way working time is organized (O'Reilly and Spee, 1998), and might be also important in determining the various options an establishment takes up. Especially due to the fact that working time arrangements can be used to serve the mutual needs of both workers and the company, the negotiation structures of the company may be an important explanatory factor in the analysis of company's organization of working time.

### 3. Data and descriptive analysis

#### 3.1 The ESWT data

The ESWT (Establishment Survey on Working Time and Work-life Balance) provides us with the information on the establishment level of various arrangements that are created within the firm to enhance the internal flexibility and to adapt to workers' preferences for combining work and non-work activities. It covers 21 EU member states including six of the new member states and is based on a survey done between 2004 and 2005. It was conducted in over 21,000 establishments where personnel managers and, if available, employee representatives were interviewed. This survey covers a wide range of arrangements of which data are not available in other sources. The questions inquire on the availability and the use of various options<sup>6</sup>.

The arrangements that have been surveyed reflect the outcomes of the previous studies that examine types of arrangements that are used 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 might not be exhaustive but does include the majority of arrangements that are currently being used in companies throughout Europe to facilitate flexibility needs of workers and companies. Below shows the range of arrangements that have been questioned in the survey and to whose needs it facilitates based on Table 1 in the previous section. Arrangements that are seen to improve flexibility for the employees yet not for the employers include leave schemes for parental reasons, care of family and relatives, and education leaves. On the opposite side, there are arrangements that facilitate employers' need for flexibility while not accommodating a great deal to the needs of employees. These include unusual hours, over time and temporary contracts. Lastly there are arrangements that are more or less there to accommodate needs of both sides, and they include, part-time work, flexible working schedule, early and phased retirement. The distinction of the arrangements is not only based on their theoretical assumptions and on previous studies, but also through the statistical test done with the data. In a previous study, we could see that the arrangements can indeed be seen as being of three latent factors as distinguished below based on the outcomes of a factor analysis (see Chung, 2007). The factor analysis outcome shows us that the arrangements are not just separate entities but in fact bundles of arrangements which have similar characteristics.

**Table 2: Classification of working time and contractual flexibility arrangements covered in the ESWT survey**

		Flexibility options for employees	
		Yes	No
Flexibility options for the company/employers	Yes	- Part-time work - Flexible working time / schedule - Phased retirement - Early retirement	- Unusual working hours (night shift, weekend shifts) - Overtime - Temporary employment (fixed-term contracts, temporary agency work, freelance workers)
	No	- Parental leave - Long-term leave for care, education, others	-

#### 3.2 Flexibility scores

From the table above, three scores of numerical flexibility practices can be derived for each company surveyed. This is namely, *employees' flexibility*, *employers' or establishment's flexibility*<sup>7</sup> and *overall flexibility* scores. A simple count method is used where

<sup>6</sup> For more detail see Annex 1.

<sup>7</sup> In this paper, flexibility for employers and flexibility for establishment entail the same thing and will be used interchangeably.

a company receives the score of 1 or 0 depending on whether or not they use the specific arrangement, and then this is added up for all relevant arrangements<sup>8</sup>. The only exceptions of this rule are for the options that can facilitate the flexibility needs of both sides, thus part time work, flexible working time, phased and early retirement. For these arrangements, the use of the arrangement is weighted by what the managers have answered as the motivation for using the arrangement<sup>9</sup>. In theory company scores can range from 0 to the number of arrangements in question, which is 8 for employee's flexibility and 9 for employer's flexibility, 13 for overall flexibility. A score of 0 represents a firm which does not use any of the arrangements and the higher score represents a firm that uses many arrangements<sup>10</sup>. The scores can be formulated as the equation below.

Employees' flexibility = [use of part-time for employees' needs + flexible working time arrangements for employees' needs + parental leave + leave for care + leave for education + leave for other purposes + early retirement for employees' needs + phased retirement for employees' needs]

Employers'/Establishment's flexibility = [use of part-time for the need of the company + unusual hours + flexible working time arrangements for the need of the company + overtime + fixed-term contracts + temporary agency workers + freelance workers+ early retirement for the need of the company + phased retirement for the need of the company]

Overall flexibility = [use of part-time + unusual hours + flexible working time arrangements + overtime + parental leave + leave for care + leave for education + leave for other purposes + fixed-term contracts + temporary agency workers + freelance workers+ early retirement + phased retirement]

Table 3 shows the average scores for each country for the employees' flexibility, employers' flexibility and overall flexibility. The scores can be interpreted as the numbers of arrangements the average company uses within each country to facilitate flexibility. The Nordic countries, that is, Finland, Denmark and Sweden are the countries with the highest scores for the provision of employees' flexibility options. On the other hand, the Southern European countries, that is, Cyprus, Greece, Portugal and Spain are the countries with on average companies do not provide many options to facilitate worker's flexibility. Country averages of the two types of flexibility are correlated and Southern European countries still have the lowest score on the usage of employer's flexibility and the Nordic countries show high scores. The Southern European countries, along with Slovenia Germany have comparatively even lower scores for flexibility for workers, while the Northern European countries scores for flexibility for workers is comparatively higher. The mean score for flexibility for employers is higher than the mean score for flexibility for employees due to the fact that there are more arrangements that are considered in the former. However from the standard deviation we can see how the variation between countries on the provision of

<sup>8</sup> This means that all arrangements are taken with same weights, however there can be a natural weight given to the arrangements for those used more by companies are taken into account more than others.

<sup>9</sup> Although it can be said that managers may have a tinted view on the motivation of the use of arrangements, the management survey is more representative of all company types- due to the lack of cases in the employee representative data and that the representatives do not always represent all workers within the firm. Also because the replies to the motivation questions are not dissimilar to each other (see Chung, 2007) we only use the answers from the manger survey.

<sup>10</sup> Unfortunately due to the lack of information within the data set, we cannot account for the intensity to which the options were used, with the exception of 4 arrangements. However, examining the relationship between the binominal variable of use and non use with the intensity of use for the four arrangements where this information was available, it is clear that the two are not too dissimilar (correlation of .8). In other words, most firms show similar intensity of use of the options.

flexibility options for employees is much larger than that of the flexibility options for employers. This implies that country differences are more prominent in the provision of worker's flexibility options than employer's options. This will be examined more in detail by controlling for other factors.

**Table 3: Scores for employees' flexibility and employers' flexibility for 21 EU countries (est. weighted) (management survey)<sup>11</sup>**

	Employees' flexibility	Employers' flexibility	Overall flexibility
Belgium	3.34	3.42	6.80
Denmark	4.17	3.68	7.84
Germany	3.07	3.88	6.97
Greece	1.74	2.37	4.15
Spain	2.04	3.35	5.40
France	3.17	3.69	6.84
Ireland	3.29	3.65	6.88
Italy	2.53	2.77	5.34
Luxembourg	2.70	3.11	5.86
Netherlands	3.74	4.14	7.86
Austria	2.67	3.31	5.97
Portugal	1.88	2.65	4.68
Finland	4.62	4.06	8.69
Sweden	4.06	3.63	7.76
United Kingdom	3.22	3.97	7.21
Czech Republic	3.46	4.08	7.55
Cyprus	1.69	2.51	4.29
Latvia	3.09	3.26	6.38
Hungary	2.73	2.59	5.42
Poland	3.81	3.71	7.51
Slovenia	2.63	3.59	6.24
(non-weighted) Mean	3.03	3.40	6.46
Standard Deviation	0.80	0.55	1.25

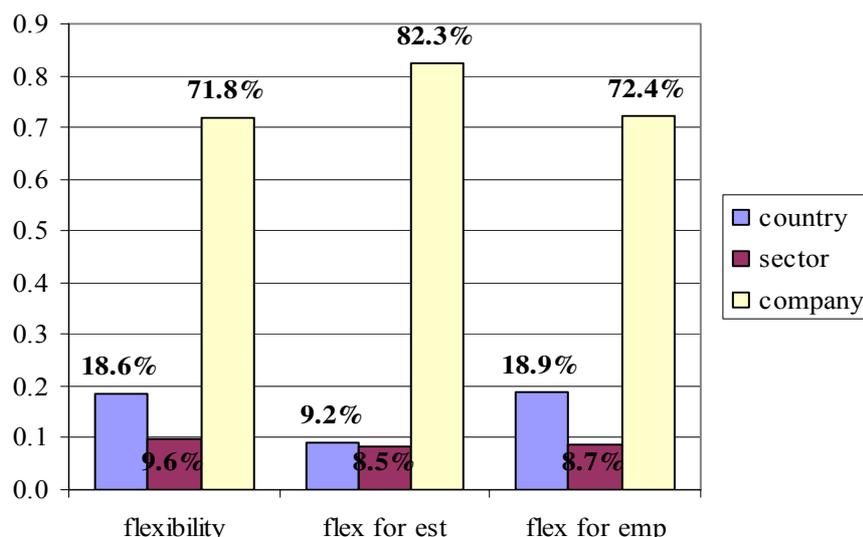
#### **4. Variance and determinants of organization of numerical flexibility of European companies**

In this section the explanatory power of each level, that is, the country, sector and company, is examined. Then the determinants of cross-company variance in the use of flexibility options are investigated with an emphasis on the different effect different countries can have. In other words, here the focus is to explore the variance of flexibility practices explained by the country level and different effects of company, sector level factors between countries. This is done by multi-level analysis which enables us to see the contextual effect of being within a certain country. Although an interaction term can be used in a fixed-effect model to examine the country effect of the various factors, this does not take into account that countries come from a distribution of a larger group of countries and may make the model more complicated than needed.

##### **4.1 Variance of each levels and countries**

<sup>11</sup> The numbers of companies used in deriving each score are different, for the differences in missing cases. This is why the employee's and employer's flexibility score does not add up to overall flexibility score.

To see to what extent each of the factors in different levels, explain the variation of the provision/use of flexibility arrangements within a company a multi-level analysis was done using ML Win. Strictly speaking in multi-level analyses, all levels should be random groups from a general population of groups without fixed characteristics. Sectors and countries in some sense cannot be seen as a level for this reason. However, for the purpose of this paper, we use sector and country as levels here to examine the variance of the levels which relaxes the assumption. However, in the extended model to examine the country effect on the various factors, the model is restricted to 2-levels, that is, company and country level, which entails that we perceive the countries taken in the analysis as sub-samples of all countries within Europe or the world.



**Figure 3. Variance explained by three levels (data: ESWT 2004/2005)**

The results show that in all three flexibility scores, that is flexibility overall, flexibility for employers/establishment and for employees, company level variation is greater than that of countries and sectors. What this entails is that the use of various flexibility options can be explained by various company level characteristics mostly, more than 72% in all three cases, and then from country level characteristics and then least by sectoral level characteristics, which at most accounts for only 10% of the variance. Of the three scores, flexibility options for workers are explained most by country- 18.9% which means that of the two types of flexibility options, there seems to be more variance in the provision of options for workers across countries and the use options for companies are more similar between European countries. Through this we can say that indeed countries do matter in the provision of flexibility options both for workers and companies, however it is more so for the options for workers. However, in addition to the variance between countries, there can be different effects of explanatory factors that can also vary across countries.

#### **4.2 Explaining the cross-company variance and country effects**

Next we examine the various explanatory factors that can explain the variation of flexibility practices of establishment. From previous studies, we can see that the country the firm 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 firm. Of the background information of the company within the ESWT data, the following was chosen as factors that explain the cross-company variation in the use of flexibility options.

- **Country**
- **Sector** – 1) two broad category: industry vs. service  
2) 13 category – reference: manufacturing

3) public vs. private

- *Firm characteristics*:

- 1) Size – 6 categories<sup>12</sup>
- 2) Composition<sup>13</sup> – proportion of female workers – 5 categories
  - skilled workers – 5 categories
  - younger workers (younger than 30) – 5 categories
  - older workers (older than 50) – 5 categories
- 3) Collective agreement on working time – dummy
- 4) Existence of employee representative body – dummy
- 5) Workload variation – daily – dummy
  - weekly – dummy
  - seasonal – dummy
- 6) Economic situation of the company – 4 scale<sup>14</sup>
- 7) Work-life balance responsibility of company – 5 scale<sup>15</sup>
- 8) Work-life balance facilities<sup>16</sup> – dummy

As mentioned in the previous section, service sectors and the public sectors are seen to have more flexibility. Also bigger companies may have more options, especially those with women and older workers who can be more in need of various flexibility options geared for workers. Also companies who are in need of skilled work force may have more flexibility options for workers for ease of recruitment. It is not hard to imagine that companies with more variation in the workload will be in need of more flexibility. Also companies in better economic situation may have more flexibility options for workers, for they are able to provide them. Here the existence of a collective agreement on working time, and existence of an employee representative are chosen as variables which indicate the industrial relations of the company. The existence of an agreement on working time may indicate as how the two parties negotiated on the use of flexibility within the firm to reconcile the needs of both sides. When there is an employee representative we can predict that it is easier for employers and workers to strike up an agreement on flexibility, thus increasing the number of flexibility options provided within the company for both establishments and employees. In addition, we can expect an increase in the number of flexibility options for workers when there is an employee representative for their existence may better able workers to voice the needs for flexibility. These two indicators can be distinguished from the other factors in the sense that they can be taken up strategically to enhance flexibility may it be for the establishment or for the employees, while as the others are more characteristic variables which are of a fixed nature. The perception of managers on the responsibility of the company to provide workers with options to reconcile work and private life is also an important factor that can explain the use of various flexibility options that provide work-life balance. The provision of work-life balance facilities may also be another indicator of the perception of the company in providing workers with better options. However, it maybe work-life balance services can be used as substitutes for working time options that have similar purposes. Also it maybe that companies which try to enable workers to reconcile work and life may have less options that are for companies' production needs. Of these company level characteristics, we can predict that variables related to institutional aspects will have more country level variance. These are mainly the industrial relations variables, thus the existence of employer representatives, and the existence of collective agreement on working time.

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<sup>12</sup> 10 to 19, 20 to 49, 50 to 99, 100 to 199, 200 to 499, 500 or more.

<sup>13</sup> Less than 20%, 20% to less than 40%, 40% to less than 60%, 60% to less than 80%, 80% or more.

<sup>14</sup> Very bad, quite bad, quite good, very good.

<sup>15</sup> 1 = it is not at all the task of the company, 5 = the company should definitely consider the private responsibility of its employees.

<sup>16</sup> Here, they are kindergarten and crèche, other professional help for children, professional help for household management, other facilities.

Here multi-level regression analysis is done and tested the random effects for all explanatory variables for three dependent variables, flexibility overall, flexibility for establishments and flexibility for workers. Of these the models with the best fit and significant random effects were chosen. Here only country level random effects are examined, and possible company level random effects are not investigated.

### *The Average European company*

Firstly we examine the fixed-terms of the model which represents the average effect or relationship of the factors in question for all countries across Europe. For the sectoral differences, we can see that overall services sectors use more flexibility arrangements than industries sector for overall flexibility as well as the two sub-types, even when we control for sectors and other company characteristics. The construction sector uses significantly less flexibility arrangements than other sectors in all three accounts. Within the industries sector, the mining sector seem to have less flexibility options for workers and the electricity gas and water sector seem to have more options for establishments and thus, overall flexibility options compared to manufacturing sector. Most services sectors provide more or similar numbers of flexibility arrangements compared to the manufacturing sector. However, companies in the hotel and restaurant sectors have approximately the same numbers of flexibility options overall as manufacturing sectors, although in closer look, they use significantly more options for establishments and significantly less for employees. The opposite holds true for financial intermediation where there are less options for establishments but more options for workers and similar overall. Transport, storage and communication sector use more flexibility options geared towards company's needs, which makes them have significantly more flexibility options overall, while the provision of options for workers is not different from that of the manufacturing sectors. On the other hand, real estate, renting and business activities, public administration and education use more flexibility options for workers, and in the former two sectors they also have more flexibility overall comparatively. Lastly, health and social work and other social services sectors have more options in all three categories, but this is especially true for the options for establishments for they seem to have more arrangements that facilitate companies' needs than any other sectors. For the average European company, being within the public sector does not seem to have any effect on the numbers of options provided within the company.

Number of employees in the company makes a significantly big difference in the provision of flexibility options in all accounts. It is clear that bigger companies provide more flexibility options may it be for establishments or for workers and the effect seems to be quite large especially for the former type of flexibility. This relationship is not surprising in the sense that bigger companies tend to have more workers with different needs, and even if only one worker uses the option it is counted in the score calculation. For composition of the workforce, the proportion of female, skilled and younger workers are all significant in explaining the difference in the provision of flexibility options. However, it is the proportion of younger workers that makes the difference in the use of options for establishments, while it is the proportion of female and skilled workers that make a difference in the provision of options for employees. Of the two the proportion of female workers has a larger effect than the proportion of skilled workers. These two variables may be an outcome of the use of flexibility as well as being an explanatory factor, where companies with more work-life balance options attract more female and skilled workers. The proportion of older workers within the company does not seem to have any impact on the numbers of options provided within the firm, however this may have to do with the categorization of the variable<sup>17</sup>.

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<sup>17</sup> More than half the companies in the survey, 57.2% to be exact, are companies with less than 20% of their working force who are 50 or older.

**Table 5: Multi-level regression analysis outcome for flexibility arrangement provision for 21 EU countries (ESWT 2004/2005) – fixed part**

	Overall flexibility		Flex for est		Flex for emp	
	B	Std. Error	B	Std. Error	B	Std. Error
(Constant)	5.659***	0.262	2.995***	0.114	2.617***	0.164
Mining and quarrying	- 0.290	0.216	0.038	0.136	- 0.329**	0.153
Electricity, gas and water	0.314*	0.162	0.187*	0.105	0.099	0.114
Construction	- 0.584***	0.109	- 0.400***	0.068	- 0.273***	0.048
Retail, repair	0.021	0.054	0.016	0.034	- 0.033	0.038
Hotel and restaurants	0.117	0.098	0.390***	0.062	- 0.285***	0.070
Transport, storage	0.272***	0.082	0.256***	0.052	- 0.007	0.058
Financial intermediation	0.047	0.106	- 0.292***	0.068	0.277***	0.076
Real estate, renting and business activities	0.262***	0.067	0.020	0.043	0.193***	0.048
Public administration	0.265***	0.092	- 0.096	0.061	0.319***	0.067
Education	0.152	0.102	0.003	0.120	0.216***	0.073
Health and social work	0.615***	0.096	0.395***	0.063	0.211***	0.069
Other social services	0.676***	0.109	0.462***	0.071	0.186**	0.078
Public sector	0.132	0.081	0.132	0.072	0.046	0.079
Number of employees	0.584***	0.022	0.328***	0.016	0.257***	0.015
Female proportion	0.139***	0.015	0.006	0.009	0.136***	0.011
Skilled proportion	0.079***	0.019	0.006	0.007	0.071***	0.014
Younger proportion	0.063***	0.019	0.061***	0.012	- 0.001	0.013
Older proportion	0.000	0.000	0.000	0.000	0.000	0.000
Working time agreement	0.329***	0.077	0.215***	0.026	0.160***	0.049
ER body exist	0.514***	0.045	0.274***	0.029	0.222***	0.049
Variation within a day	0.123***	0.048	0.147***	0.031	- 0.034	0.034
Variation within a week	0.310***	0.041	0.196***	0.026	0.102***	0.029
Variation within a year(seasonal)	0.379***	0.035	0.246***	0.022	0.131***	0.025
Economic situation	0.065**	0.028	- 0.002	0.018	0.077***	0.020
WLB task of company	0.219***	0.015	0.066***	0.010	0.139***	0.011
Work life balance facilities	0.599***	0.063	0.289***	0.041	0.291***	0.044
N		13431		13696		13269
-2*loglikelihood		56613.700		45722.700		46634.050
Adj. R-square(from OLS regression)		45.0%		32.3%		35.2%

Note: \*\*\* :  $p < 0.001$ , \*\* :  $p < 0.05$ , \* :  $p < 0.1$

Reference category for sector: manufacturing

The existence of working time agreements and employee representative body have significant effects on the provision of flexibility options overall and for both types, and the effects seem to be stronger for the options for establishments. The existence of a collective working time agreement can also be seen as an outcome of the extensive use of various flexibility options. In other words, the more options the company has, there may be a need to draw up more of a formal agreement on the use of the options. For the existence of firms with work variations seem to have more flexibility arrangements and longer term variations, variation of work load within a week or a year, seem to be more important than the shorter term variations such as variation of work loads within a day. Variation of workload within a day does not make a significant difference in the provision of flexibility options geared towards employees. Also, firms which have reported to be in a good economic situation provide more flexibility arrangements for employees but this is not true for options for establishments. Firms where the managers have replied that it is a task of the company to provide work-life balance of its workers provide more flexibility arrangements overall, and for both establishments and employees than those who do not think this is the case. On top of this, it seems that firms that have work-life balance facilities have more flexibility arrangements as well.

### *Country dependent effects*

Now we examine the cross-country differences in the effect of the factors that explain the variance of flexibility options provision. Multi-level allows us to see which of the factors under question have different effects per country, which signifies that not all factors have the same effect for all European countries. It maybe that the some characteristics have different effect depending on the country the company is in. Here we are interested in the industrial relations variables, as well as the effect of being within the public sector. The multi-level random effects results are shown in Table 6.

**Table 6: Cross-country effects for factors that affect flexibility arrangement provision for 21 EU countries (ESWT 2004/2005) – Multi-level analysis random effects**

	Overall flexibility		Flex for est		Flex for emp	
	Variance	Stad. Error	Variance	Stad. Error	Variance	Stad. Error
Level 2 variance						
Constant	1.352***	0.426	0.249***	0.078	0.520***	0.166
Construction	0.153**	0.071	0.053**	0.027		
Education			0.159**	0.078		
Public sector	0.058*	0.030	0.071**	0.028	0.085**	0.034
Number of employees	0.009**	0.004	0.004**	0.002	0.003***	0.001
Skilled proportion	0.005**	0.002			0.002**	0.001
Working time agreement	0.083**	0.037			0.030**	0.015
ER body exist					0.028*	0.015
Level 1 variance						
Constant	3.890***	0.048	1.623***	0.020	1.928***	0.024

Note: \*\*\* :  $p < 0.001$ , \*\* :  $p < 0.05$ , \* :  $p < 0.1$

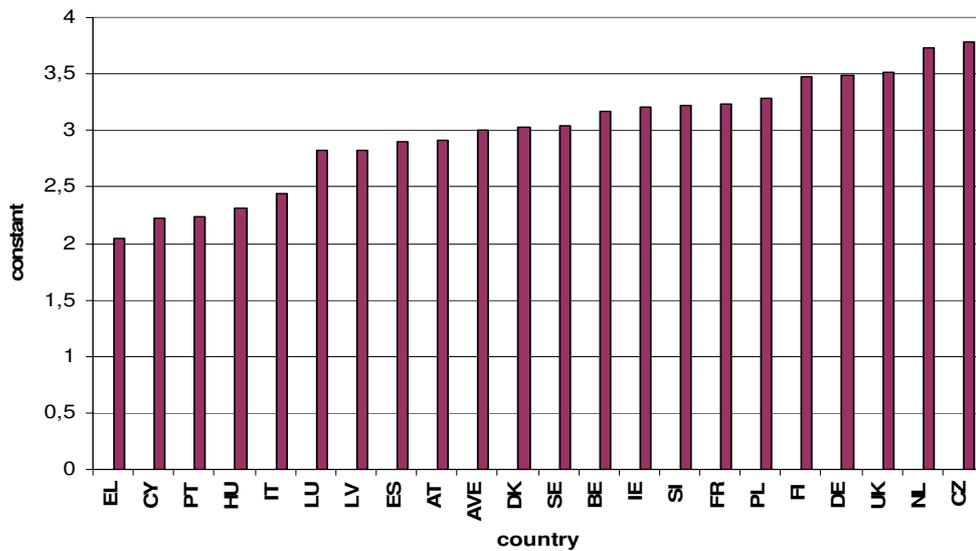
Covariance estimates between variables are not presented here due to insignificance of the scores.

The cross-country variances in the effect of the variables shown in the table are the variances after taking cross-country differences of other variables which the model has allowed to vary into account. In most cases, when we examine cross-country difference for each variable separately, we get higher variance outcomes per variable. For example, although the cross-country variance in the effect of being within the public sector on overall flexibility is 0.058 in the second column of Table 6, this increases to 0.127 when we examine this solely without taking other cross-country variance of variable effects into account. This decrease is due to by allowing for cross-country variance in the effects of other factors included here, most probably the existence of working time agreement and employee representative, the variance that have been explained before by the cross-country variance of being in the public sector is explained by other factors. The model chosen in this paper allows for country variances for all factors with significant country variances in their effect, although this made some of the effect variances quite small. However, this enables us to see the true country variance of the variables having taken into account cross-country variances in the effect of other relevant factors. However, we focus on the examination of the cross-country variance in the effects of industrial relations related variables, such as being within the public sector, having a working time agreement, and an employee representative body. The analysis done here are in a sense exploratory since we do not provide concrete reasoning for the variance and that it is not done to test a theory. However, it provides us with useful information in understanding the workings of society.

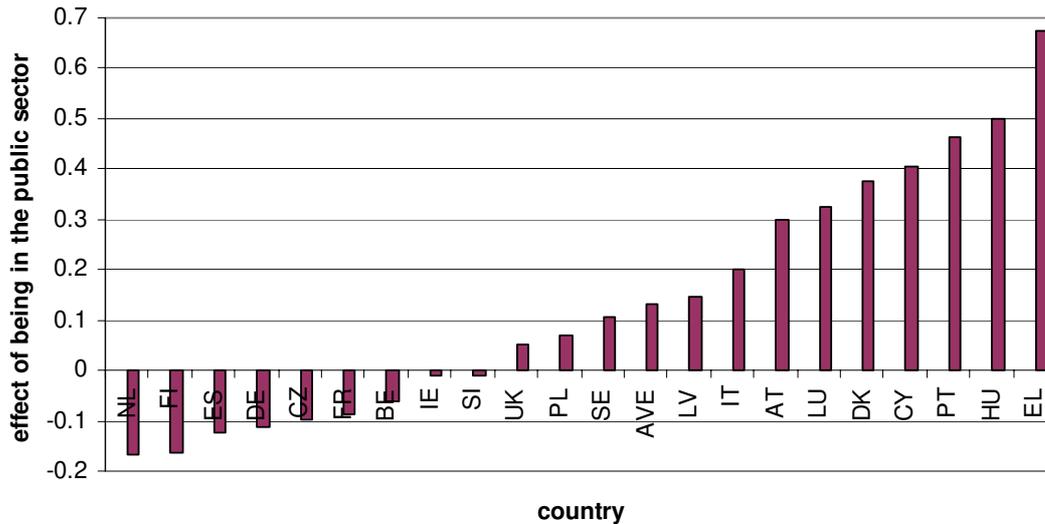
### *Flexibility for establishments*

In the case of flexibility for establishments, there are cross-country variances in the effect of being within the construction sector, education sector, being a public company, and the number of employees as well as the cross-national variance in the average number of options

provided in each country. Here we examine the variance in the average number of options for each country as well as the effect of being within the public sector in more detail. As we can see here, the average firm in Europe has approximately three arrangements that are seen to facilitate needs of the establishment. However there are large cross-national differences. Czech Republic, the Netherlands, UK, Germany, Finland, Poland and France are countries where their average firms have significantly more options for companies' needs than the European average. For example, the average company in Czech Republic has approximately four options that are seen as flexibility options that facilitate companies' needs. Companies in the southern European countries, Hungary, Luxemburg and Latvia on the other hand have comparatively less options that facilitate establishments' needs than the average European company. Greece, Cyprus, Portugal, Hungary and Italy are the countries where their average company have significantly less options than the rest of Europe. In Greece companies use the least number of options approximately one less than the European average.



**Figure 4: Cross-country difference in the average number of options provided for companies flexibility**



**Figure 5: The effect of being a public sector company on the use of flexibility options for establishments**

Although for the average European company being within a private or public sector doesn't affect the number of flexibility options used, there seems to be big variance between countries in this effect. Greece, Hungary, Portugal, Cyprus, Denmark are countries where the effect of public sector is significantly different from the European average, and public sector companies have more flexibility options than private sectors. This outcome contradicts the In other European countries there seems to be not much public-private divide in the use of flexibility options for establishment, although Dutch and Finish public companies on average seem to use less options than private ones.

Other than this, the effect of being of a certain sector is different across countries. This is especially true for the construction and education sector. Although for all companies in Europe construction sectors have fewer options that are used for establishment's flexibility compared to manufacturing sectors, this effect is significantly stronger for the construction sectors in Belgium and Denmark. For southern European countries including France and the new accession countries, with the exception of Spain and Slovenia, construction sectors are not that different from manufacturing sectors in their use of flexibility options for companies, and their effects are smaller than that of the average European company. For Greece this effect is significantly smaller from the average. The effect of being within the education sector across country is also interesting. Although for the average European company there are not any significant differences between the manufacturing and education sectors in their use of flexibility options for establishments, this effect is different across countries. Dutch and somewhat French, Swedish companies in education sectors have fewer flexibility options compared to manufacturing sectors, when other company characteristics are controlled for. On the other hand, Greek and somewhat Hungarian, Danish and Polish companies within education sectors have more flexibility options than their counter parts in manufacturing sectors.

### ***Flexibility for employees***

For the provision of flexibility options that are for the work-life balance needs of workers, there are cross-country variances in the effect of being within the public sector, having a working time agreement, a employee representative, the size of the firm in terms of workers, the proportion of skilled workers and in the number of options provided in the average company per country.

Europe's average firm provide approximately 2.5 flexibility options that are seen to be used to facilitate workers' work-life balance. Even after taking sector, size, composition and other company characteristics into account, it is still the southern European countries with fewer numbers of options. The average company in Greece, Spain, Cyprus, Portugal, Italy and Austria has significantly fewer number of flexibility options for workers than the average European company. The Nordic European countries, that is, Finland, Sweden, and Denmark, along with Poland, Czech Republic and also Belgium are countries where one can find more flexibility options than other European countries, with Finland's average firm providing up to four flexibility options for workers' needs.

Although on average in Europe, being a company in the public sector does not have any effect on the provision of flexibility options for employees, there are significant differences between countries (Figure 7). For most of the EU 15, excluding Portugal, Greece, UK and Sweden, being within the public sector does increase the number of flexibility options that are geared for a better work-life balance of workers. Among these countries, Germany, Ireland, France, Finland this effect is significantly different and stronger compared to the European average effect. However, for the six new accession countries within this survey along with Portugal, being in the public sector actually decreases the number of options. Also among these countries, Poland, Slovenia and Czech Republic the effect is significantly smaller than the average European country. For Greece, UK and Sweden it seems there are not significant differences between public and private sectors.

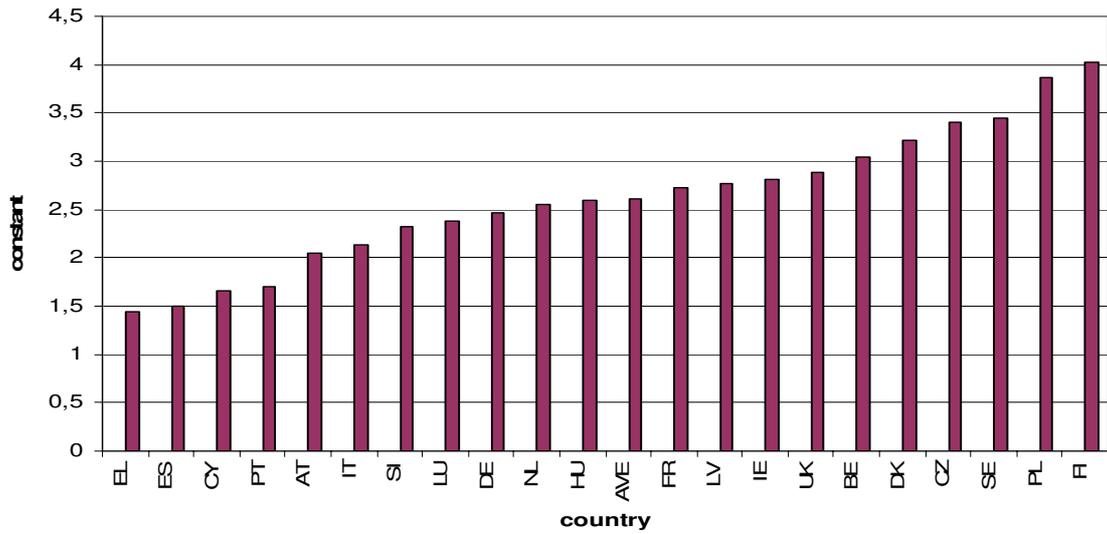


Figure 6: country differences in the average number of options provided for worker's flexibility

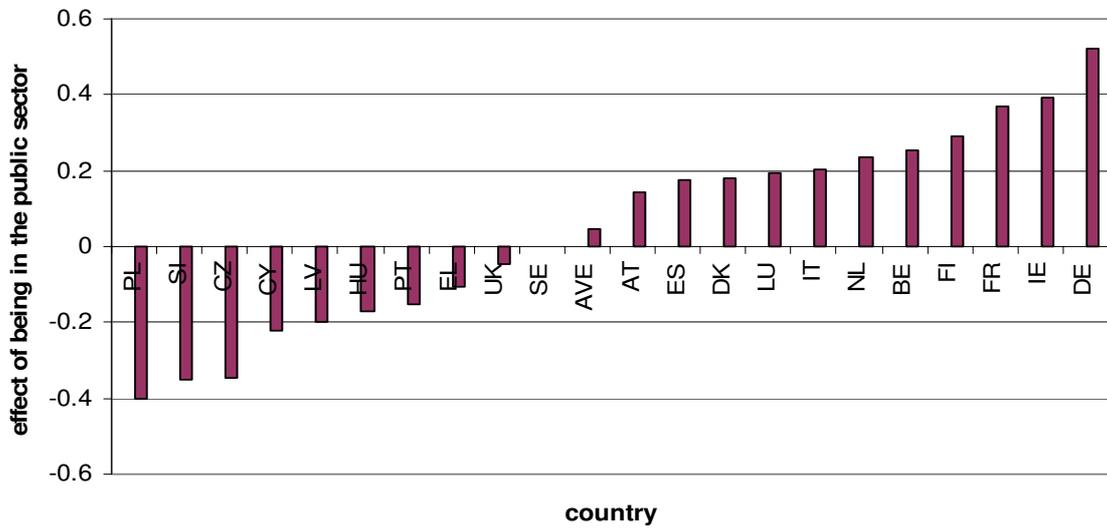


Figure 7: The effect of being a public sector company on the provision of flexibility options for employees

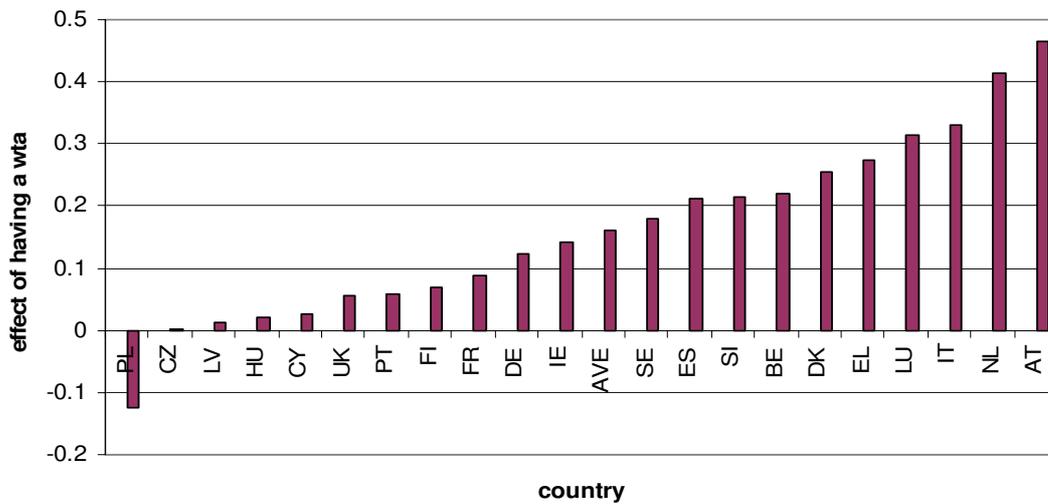
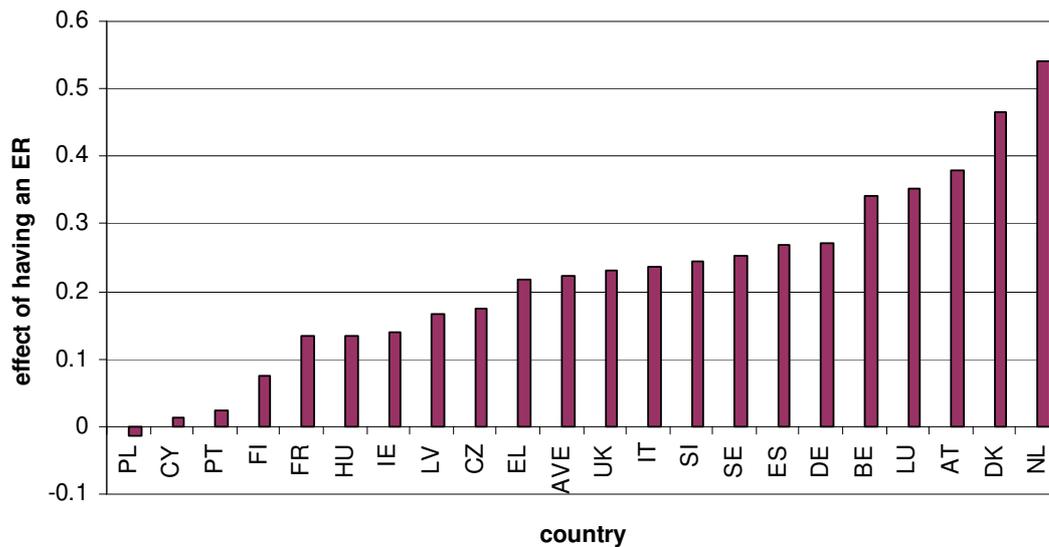


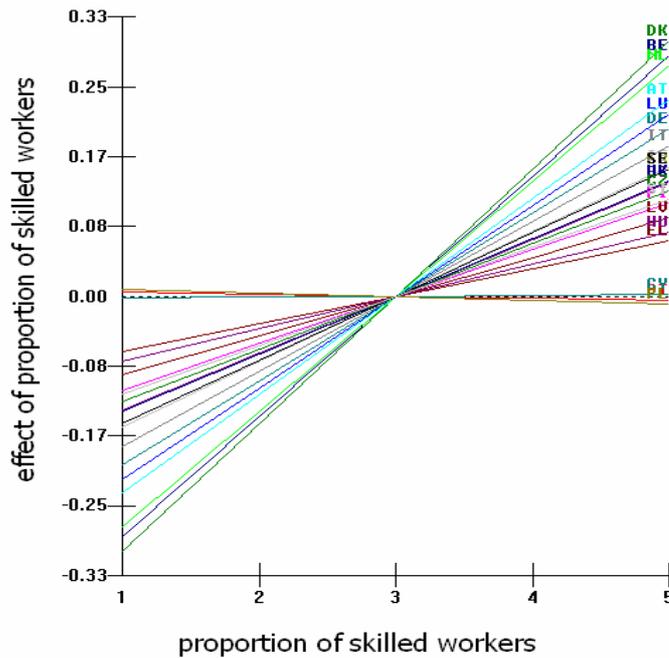
Figure 8: The effect of having a collective agreement on working time on the provision of flexibility options for employees



**Figure 9: The effect of having an employee representative on the provision of flexibility options for employees**

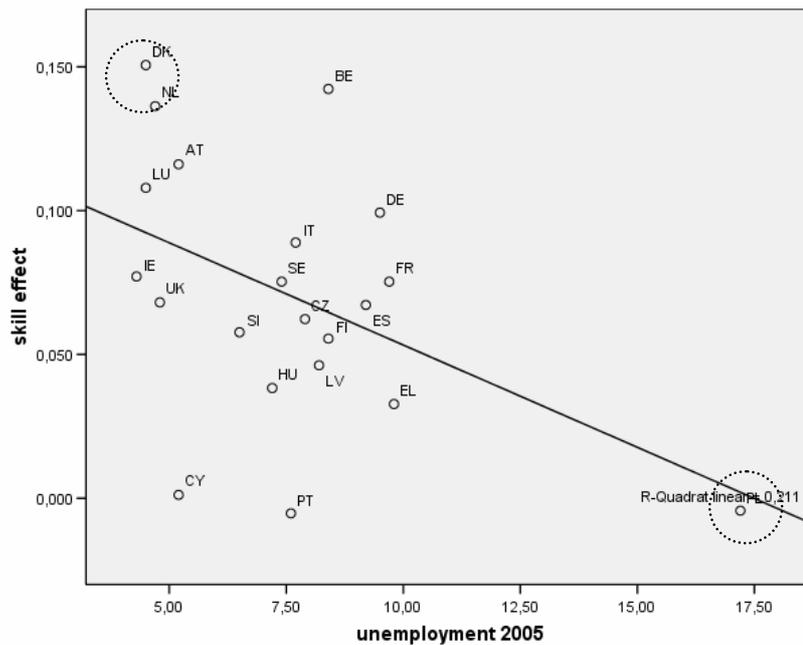
There are also large variances between countries in regards to the effect of having a collective agreement on working time has on the provision of flexibility options for employees. For the average European firm, having a collective agreement on working time increases the number of options for workers by approximately 0.2, even after taking other relevant factors into account. For Austria, the Netherlands, Italy the effect is significantly stronger than for the average European company, where an increase of 0.5 options can be expected in firms with working time agreements in Austria. Again we can see a clear division of the new accession countries from the rest of the EU 15. The new accession countries with the exception of Slovenia, the effect of having a collective agreement on working time is much smaller and for Poland there is even a negative effect. Similarly, having an employee representative within the company has different implications in different European countries. On average there is a positive effect of having an employee representative on the numbers of arrangements offered in the company for the flexibility needs of workers. However, it is significantly bigger in countries such as the Netherlands, Denmark and somewhat bigger in Austria, Luxembourg and Belgium yet not significantly different from the European average. It is significantly smaller in Poland and somewhat smaller in Cyprus and Portugal, where it seems that having an employee representative does not effect the provision of flexibility options to facilitate workers' need. Here it is also in the new accession countries where the effect of having an employee representative is smaller, and just like the effect of working time agreements, Slovenia deviates from this group. Along with the new accession countries southern European countries also have the tendency to have smaller effects of the existence of ER within the company, compared to other countries. The cross national variance of these two variables entail that although having an employee representative and or a working time agreement may enhance the probability that companies will develop more flexibility options for workers, this is not true for all countries. In the European average company strategically establishing an employee representative or enforcing a working time agreement as efforts in trying to enhance workers flexibility may work. However, the outcomes of that may be extremely high in some countries while non existent in others, such as the new accession countries.

The difference in the effect of size on the provision of work-life balance options for workers also seems to be very small. France, Ireland and Germany, the effect of size is significantly stronger than that of the European average, which entails that there are more differences between companies of different sizes within these countries. While, Portugal and Greece it is significantly smaller, thus there are more similarities across companies of different sizes within these countries compared to other European countries.



**Figure 10: The effect of proportion of skilled workers on the provision of flexibility options for employees**

In the European average firm, as the proportion of skilled workers increase, the number of flexibility options for workers increase accordingly. In Denmark, Belgium, the Netherlands and Austria, this effect is significantly stronger than that of the European average. Poland, Portugal and Greece the effect is significantly smaller and there seems to be no effect overall. In other words, in the average companies of Poland, Portugal and Greece, the numbers of options that are provided for workers' flexibility needs are the same regardless of the proportion of skilled workers they employ. On the other hand, in Denmark, Belgium and the Netherlands the increase of flexibility option due to having larger proportion of skilled workers is even stronger than that of other European countries. It may be that the countries with stronger effects are where there is a skill-shortage or a labour-shortage, and companies have to provide more options that are favourable to workers to recruit and maintain their skilled workers. On the other hand, those countries where the effect is small or non-existent, the labour supply maybe higher than demand and where companies can recruit skilled workers without having to provide incentives. To test this hypothesis, the unemployment rate of 2005 is examined with the effect of the proportion of skilled workers. A negative effect is found between the two of -0.46. However, this is mainly due to the effect of Poland which is an outlier in both cases, with a low effect of skilled worker proportion and a very high unemployment rate. Denmark, the Netherlands and Austria on the other hand are the countries where both the relative effect of having high proportions of skilled workers is high and where the unemployment rate is low of 5% or less. However, for the other countries, this relationship is not as clear. However, from this result we can say that it is likely that the effect the proportion of skilled workers has in the provision of work-life balance flexibility options for workers will be different in different labour market circumstances. In countries where there are higher labour demands companies are more likely to provide work-life balance options to recruit and maintain skilled workers.

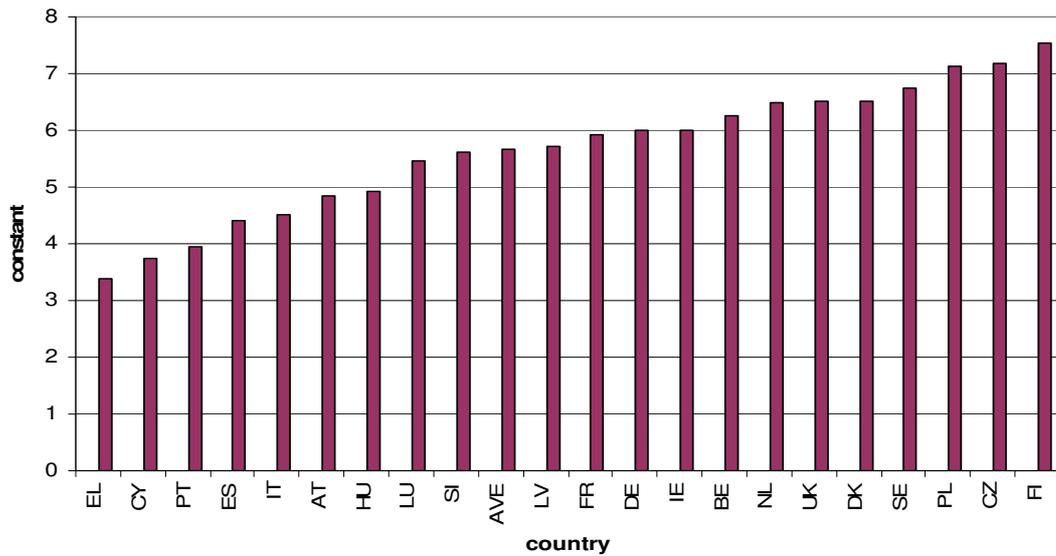


**Figure 11. The relationship between labour demand/supply and the effect of skilled worker proportion in the provision of worker’s flexibility options in European countries**

### *Flexibility overall*

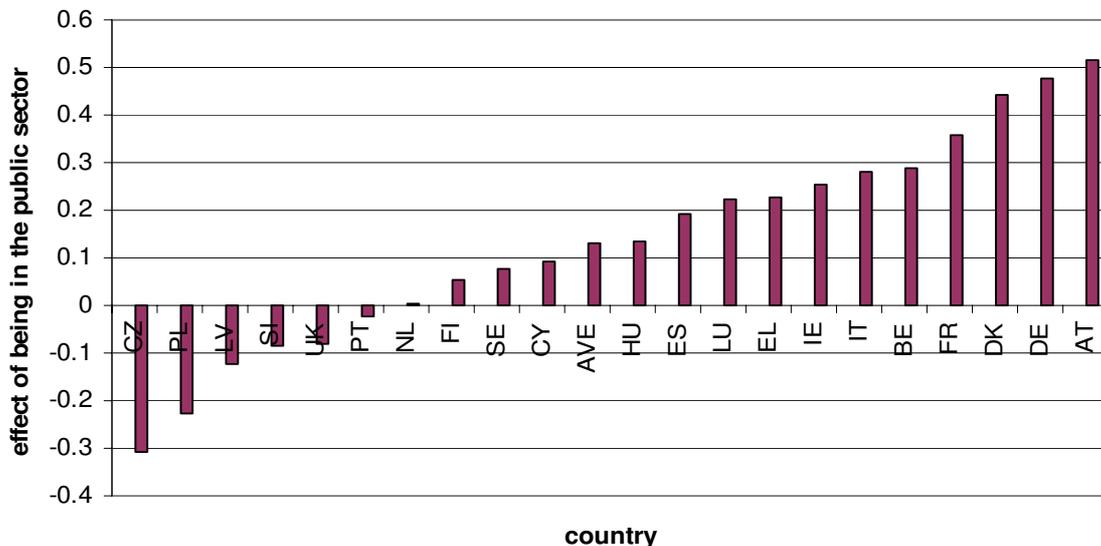
Now, we examine the cross country difference between the effects of various factors for the use of flexibility options overall. We can predict that the effect would be a combination of the two sub-categories of flexibility, that is, flexibility options for establishments and that of employees. Due to this several models could be derived but the model with the best goodness of fit with the results which were theoretically of interest to this paper was chosen. The result mirror the result of the two sub-categories of flexibility although now the variance between education sectors across country and the country effects of existence of employee representative body are not significant.

Firstly we can see the cross-national variance in the average company score for each country. As it was shown in the case for flexibility for establishments and flexibility for employees, Nordic countries with Poland and Czech Republic are those with more flexibility options than other countries. Finland ranks the highest with their average company having more than 7 flexibility options. Also in this case, Belgium, the Netherlands and the UK are also countries where the average numbers of flexibility options used is significantly higher than that of other European countries, all with more than six options on average. It is the Southern European countries yet again that show significantly fewer flexibility options, along with Austria and Hungary. Greek companies on average have approximately four options less than their counter parts in Finland with similar company characteristics. In the cross-country variance in the effect of determinant variables, we can see a variation in the effect of being within the construction sector, public sector, of having a working time agreement, of size of the company, and the effect of the proportion of skilled workers within the company.



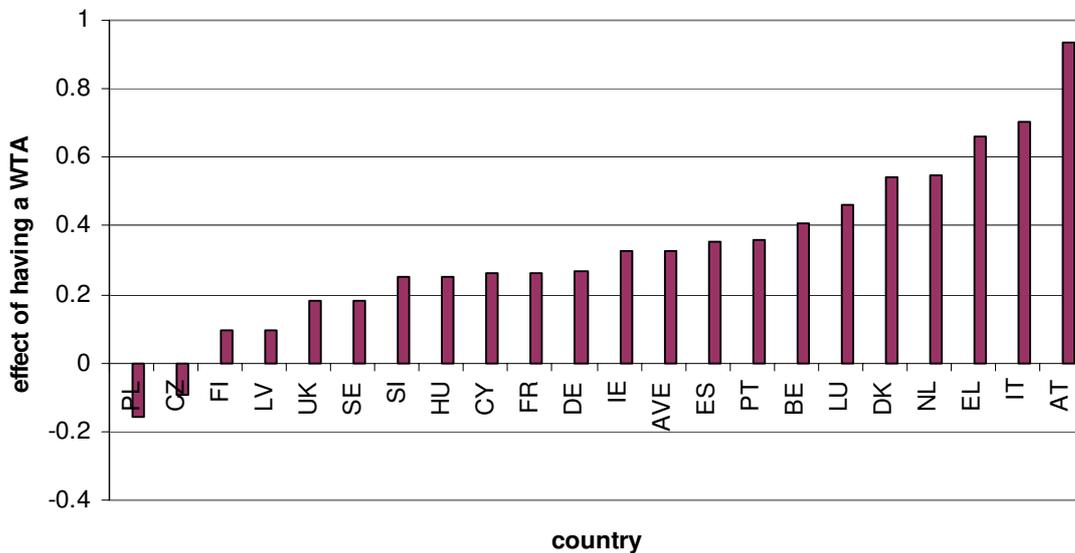
**Figure 12: Cross-country differences in the average number of flexibility options**

Overall there is a negative effect of being within a construction sector in the use of various flexibility options. Similar to the outcomes for the flexibility for establishment, Belgium and Denmark stand out as two countries where the differences between manufacturing sector and construction sectors in their use of flexibility options is remarkably larger. For Danish companies even when other company characteristics are taken into account, a company in the construction sector will have approximately 1.6 less options than that of the manufacturing sector. This is approximately 1.2 less for companies in Belgium, while in the average European company it will only be approximately 0.6 less options. Again, the Southern European countries and France along with new accession countries are the countries where there the differences between being of a manufacturing sector or construction sector in the provision of flexibility options is small. However, unlike the outcome of the model for the flexibility options for establishments, even Spain and Slovenia are not exceptions. Due to the fact that the average Danish firms provide more flexibility options than average, Danish construction sectors, the sector with the least options of all sectors in Denmark, will still have more flexibility options than that of the other services sectors of Greece for example, which is the sector with the most flexibility options of all sectors in Greece. Although this gap changes when other factors and their effects are taken into account and there are Greek firms which use several flexibility options as well.

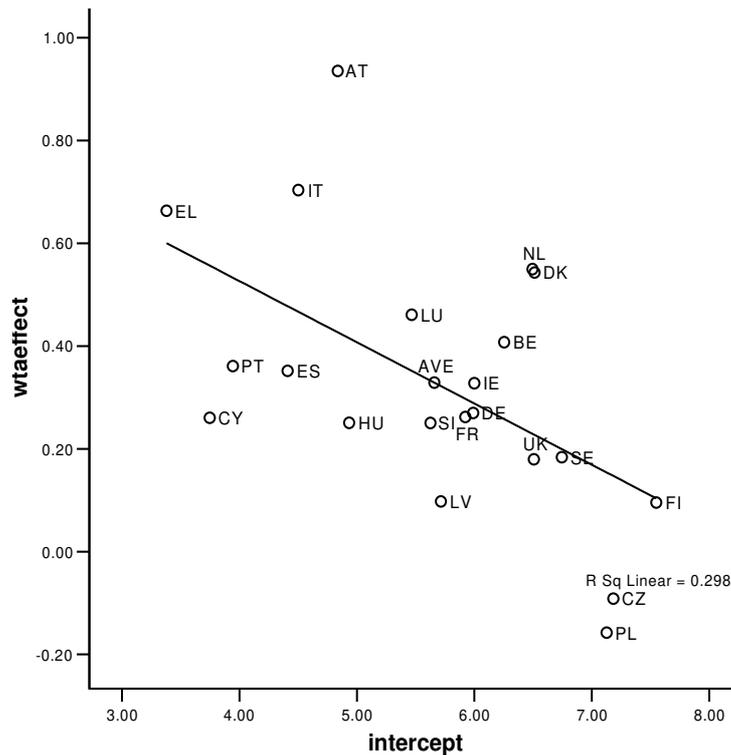


**Figure 13: The effect of being within the public sector on the use of flexibility options**

The effect of being within the public sector is interesting since the fixed effect was insignificant while the cross-country variance was significantly big for all three accounts of flexibility. Also, the country effects for flexibility options for employees (Figure 7) were different from the effects on the options for establishments (Figure 5). For example, for the new accession countries and some of the Southern European countries, being in the public sector increased the number of options for establishments and decreased the numbers of options for workers, although the size of the effects were different. For the total number of flexibility options overall, for the new accession countries, there is a slight negative effect for Czech Republic and Poland or not much of an effect at all for the rest. In Austria, Germany, Denmark and somewhat Belgium, being within the public sector has different implications to that of the European average showing a stronger positive effect in these countries. In these countries, public sectors do have more flexibility options than private sectors, even when other company characteristics are taken into consideration. This is a contrasting to the common belief that private sectors are more flexible than public sectors due to less institutional restrictions. Thinking in terms of flexibility options, it is actually the public sectors with more options in some countries while there are no differences between private and public companies in others.



**Figure 14: The effect of having a working time agreement the use of flexibility options**



**Figure 15: the relationship between the level of flexibility and effect of working time agreements**

The results for the cross-country difference in the effect of having a working time agreement on the use of flexibility options overall is similar to the results of that of the options for workers. For companies in Austria, Italy and Greece, having a working time agreement significantly increases the number of flexibility options compared to not having one. This relationship is significantly stronger than what you can see in the average European company. Where as in Poland and Czech Republic, there is a negative effect of having a working time agreement, but to a small degree. It can be said that in these two countries, along with Finland and Latvia to a certain extent, having a working time agreement does not increase the number of flexibility options provided within the company, which is the case in other European countries. There seems to be a slight negative relationship between the average overall flexibility score for each country with the cross-country effect of working time agreement. This entails that countries that on average have more flexibility options overall, the effect of working time agreements is smaller or non existent, while countries where the companies have on average less flexibility options the effect of having an working time agreement is larger. This can mean that in countries where flexibility options are not used to great extents, having collective agreements between workers and companies may help the increase in the use of options on both accounts, those for workers and those for companies.

Since the effects of the size of the company on the use of flexibility options for establishments were larger than that on the provision of flexibility options for employees, the effect of size on overall flexibility options is similar to the effect of the former. Thus, here Denmark, Germany, Austria and Belgium are shown as countries where the effect of size is even larger than that of the average European company, which is 0.58. This means that there are larger variances between companies of different sizes within these countries, and the bigger the company the more flexible options. However, for Portugal, Czech Republic and somewhat for Greece, the effect of size is smaller. That means that there are more similarities across companies of different sizes within these countries. However, even in these countries, one can see that the effect of size does still exist and larger companies have more options.

Lastly we examine the effect of the proportion of skilled workers within the company on the use of various flexibility options. In Poland, Greece and somewhat Cyprus and Sweden, there

seem to be no effect of having skilled workers in the company on the flexibility options provided. In these countries the numbers of flexibility options do not increase even when there are more skilled workers inside the company, while in other countries there is a slight increase when there are more skilled-workers. The effect of the proportion of skilled workers within the company is significantly higher in Belgium, Denmark, Austria and Italy than that of the European average. This entails that in these countries, the more skilled workers there are in the company the more flexibility options and the increase in the number of options is higher than in other countries. For example, for Belgium, the increase in the number of flexibility options that can be accounted for the increase in the number of skilled workers in the company is approximately 0.23 per 20% increase of skilled workers. For other countries on average it is 0.08 and for every 20% increase, and for Poland the number of flexibility options provided in the company is the same across all companies with different proportion of skilled workers within the company.

## 5. Conclusions

This paper 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 companies and the needs of workers. The clear cut answer to this is *yes it does*. This is more the case for flexibility options for workers' work-life balance needs and less so for the options companies take up to adapt to business cycles or other production needs. Also, even if we control for other relevant factors that may affect the practices of flexibility there are significant variance between countries in the use and provision of flexibility options. In addition, the effect of various factors that explain for the variance of the use and provision of flexibility options are country dependent. In other words, some characteristics which can contribute to explaining the use of flexibility options of companies have different implications within different countries. For flexibility options that are perceived to be used for company's production needs being within certain sectors have different implications across countries. For flexibility options that are perceived to be used for worker's work-life balance needs, industrial relations aspects of the company, thus the existence of working time agreements and employee representatives have different implications across countries. There seems to be a division with the EU 15 and the new accession countries in these effects where the relationship as well as the strength of the effect changes. There are some evidence that companies may use work-life balance options as incentives to recruit and maintain their skilled work force, as we can see the countries where labour force demand is strong the effect of proportion of skilled workers in the provision of flexibility options for workers is stronger, and visa versa. Also collective agreements on working time may help the use of various flexibility option for both worker's needs as well as company's needs, especially in countries where flexibility options are not widely and frequently used.

The size of the company is an important factor in explaining the amount of options provided and the effect varies across countries for all three cases. However, the direction of the effect is not different across countries and for all types of flexibilities. Lastly and more importantly, there seems to be a significant variance between countries in the effect of being within the public sector. The average effect of being within the public sector compared to being in the private sector across European countries was insignificant. This means that in Europe on average, the number of flexibility options provided, those for workers and also those for companies, is similar between private and public companies within the same sector (manufacturing sector in this case) with similar company level characteristics. However, for both all three scores of flexibility, there were significant country differences in this effect. There was a noticeable division between the new accession countries and the rest of Europe especially in the effect of being within the public sector and the provision of flexibility options for workers. It seemed clear that in all of the surveyed new accession countries, being

within the public sector decreased the numbers of options provided within the company that were beneficial for workers' work-life balance. On the other hand for most other countries, with the exception of Portugal, Greece, UK and Sweden, it seemed clear that public sectors provided more flexibility options for workers. The similar outcome could be seen for flexibility options overall.

In conclusion based the outcome of this study, we can say that countries are quite a decisive factor in explaining why companies use various flexibility options. Not only being within a certain country effect the overall number of options the company uses, but the reasons for the high or low usage or the effects of flexibility options will be different across countries. However on the other hand we must not forget that there is still a large amount of variance between companies within countries and sectors. What this implies is that we are dealing with varieties of company types even within the same countries with same institutions. For this reason it is clear that to examine flexibility practices properly, it isn't sufficient just to examine the country level indicators. We must examine not only countries but also sectors and companies as well as individuals to see exactly what is happening in reality. For this reason, in the areas of labour market flexibility more studies should be done in the more macro levels, within companies and individuals for this is where flexibility occurs. Also, policy makers must remember that there cannot be uniform flexibility, nor 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 to these needs and their capacities for this will vary resulting in different outcomes of flexibility option practices as we can see in this paper. In addition the same strategy measure will have diverse outcomes based on the country it is implemented it, as we can see in the case for flexibility for workers.

There are still some remaining questions that can be investigated further. 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. The enquiry on exactly what about the countries make the difference is also another aspect that could be inspected in more detail.

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Annex 1] Flexibility arrangements and work-life balance issues covered in the ESWT survey

Main Category	Subcategories	Information	Proportion	Note
Part-time work	-	Use	O	
	Overall	Use	X	
	Work at night	Use	O	
Unusual hours	Work on Saturday	Use	O	
	Work on Sunday	Use	O	
	Shift system	Use	O	
	Overall	Use	O	
Flexible working hours	Working time accounts	Use	X	Possibility to accumulate hours for full days off
Overtime	-	Use	O	Any overtime since the beginning of this year
Parental leave	Parental leave	Use	X	In the past three years
	Leave for care or illness in family	Availability	X	
Long-term leave	Leave for education	Availability	X	Paid and unpaid
	Leave for other purposes	Availability	X	
	Early retirement	Availability	X	
Retirement schemes	Phased retirement	Availability	X	only asked to companies with 50+ workers
	Fix-term contracts	Use	X	
Temporary contracts	Temporary agency workers	Use	X	In the last 12 months
	Freelance workers	Use	X	
	Kindergarten or crèche	Availability	X	
Work-life balance facilities	Professional help for childcare	Availability	X	
	Professional help for household management	Availability	X	
	Others	Availability	X	