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"Flexibility, but for whom?
A new approach to examining labour market flexibility
across Europe using company level data"¹

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Abstract

Labour market flexibility continues to be one of the key issues in the reform of labour markets in welfare states. The way in which various countries adapt to this need differs according to their institutions and prevailing strategies. Despite the vast numbers of studies addressing this issue, labour market flexibility has been examined predominantly by concentrating on the arrangements that firms adopt to adjust to market fluctuations. Thus flexibility arrangements are perceived to exist only to facilitate employers' or companies' needs. However, flexibility in the labour market also enables individuals to accommodate various needs that occur throughout their life course and to facilitate one's work-life balance. As companies adapt to business cycles with labour market flexibility, workers adapt to life cycles with it. Based on this definition, flexibility practices of companies can be measured two dimensionally, on one side its overall level and another to whom it is (more) geared towards, workers or the company. In addition, this study examines flexibility at the establishment level, in contrast to previous studies of flexibility which focus on the institutional/regulatory level or the individual behavioural level.

The aims of this project are three-fold: firstly to examine the various practices of flexibility in companies to see if flexibility can indeed be partitioned as described above; secondly through aggregating company data to the country level, see whether there are cross-national variances in the degree and focus of flexibility practices; and lastly to investigate the relationship between the use of flexibility options for employers and those for employees. The data used to answer these questions is the European Survey of Working-Time and Work-life Balance, a survey based on the establishment level covering 21 EU member states for the year 2004/2005. The outcomes show that based on the practices of companies, flexibility can indeed be distinguished depending on whose flexibility it accommodates. Moreover, they show that countries where the average company has more flexibility arrangements for employers it provides more arrangements for employees as well, and there seems to be more variation in the provision of the latter than the former.

1. Introduction

Labour market flexibility continues to be one of the key issues in labour market reform for welfare states. International governmental organizations such as the EU and the OECD acknowledge that flexibility is a key element in the development of countries and flexibility has gained increasing attention over the years (OECD, 1994; 1997; EET, 2003; EC, 2006; See Euroactive news 21st Sept 2005). However, flexibility has predominantly been examined by concentrating on the arrangements firms use to adjust to market fluctuations. Even more so, the focus of flexibility has been on the deregulation of employment protection or flexibility measures that enable firms to adjust their labour forces. There seems to be a dichotomy in the debate on labour market flexibility, where flexibility is examined as something solely for employers while workers need (employment or job) security due to the increased levels of uncertainty from the use of various flexibility measures. However, labour market flexibility also enables individuals to accommodate various needs that occur throughout their life course. Labour market flexibility, used in the right way, can help workers who must juggle work with care, education, leisure and other activities. As companies adapt to business cycles through labour market flexibility, individuals can adapt to their life cycles through flexibility.

One potential reason for this one-sided view of flexibility is that there may have been insufficient information available on flexibility arrangements that can be used to accommodate workers' needs, especially for comparing across countries. This paper overcomes this limitation through using the *Establishment Survey of Working-Time and Work-life Balance*, which covers a wider scope of working time arrangements used within a company. In particular, this survey provides various flexibility measures that can be seen as those which are for the establishments' needs and/or for the employees' needs. Through the analysis of this data, labour market flexibility, and more specifically numerical flexibility, is considered in a broader context and as something that can accommodate the needs of both workers and companies. The aim of this paper is to examine the cross-country variation in numerical flexibility, in both internal (i.e. working-time flexibility) and external practices (i.e. contractual flexibility). Firstly a test is conducted to see whether it is feasible to divide flexibility into a framework of flexibility for employees and flexibility for employers. Subsequently, a flexibility index is constructed using this framework to arrive at aggregated country scores. Clustering countries based on their flexibility scores then allows for an examination of cross-country variation in overall flexibility as well as its sub dimensions. Lastly, a scatter plot is examined for an investigation of the relationship between the use of flexibility options for employees and those for employers at an aggregate country level.

The structure of this paper is as follows. The next section examines previous studies dealing with the definition, measurement in labour market flexibility. Then a new framework in which flexibility can be examined into flexibility for workers and company is given. The relevance of examining flexibility at the establishment level and the relationship between this level with the other macro and micro levels is discussed as well. In the third section the data used in this paper is presented in more detail and the surveyed arrangements are then categorized according to the framework derived in the previous section. Also in this section, some descriptive outcomes are given. In the fourth section, the framework derived in the previous sections is tested through factor analysis then country aggregate scores are examined for a cross-national comparison on the provision of flexibility arrangements. The paper concludes with some implications for policy.

2. Flexibility – definition/dimensions and previous literature

1) The loop-sided definition of Flexibility

Labour market flexibility is a somewhat abstract concept (Pollert, 1991) and its definition can vary across authors and across disciplines. Generally, labour market flexibility refers to the extent and speed with which labour markets adapt to fluctuations and changes in society, the economy and production cycles (Standing, 1999: 49). It can be achieved, and may thus be

categorized, in various ways. The most widely-used distinction of labour market flexibility is the one made by Atkinson(1984) that distinguishes flexibility depending on where the flexibility exists (internal or external to the firm) and how it is developed (functionally, numerically or financially). Such a division allows for four distinct types of flexibility (Atkinson, 1984; Atkinson and Meager, 1986): external numerical or contractual flexibility, internal numerical or working time flexibility, functional flexibility and financial or wage flexibility. Despite this broad range in which labour market flexibility can be introduced and used, the focus of the debate on labour market flexibility has more or less has been on flexibility for companies' adaptation to business cycles. Especially the focus has been on external numerical flexibility or contractual flexibility and more specifically deregulating employment protection regulations².

Although labour market flexibility has been more or less perceived as something devised to satisfy the needs of companies, they are not the only ones who benefit from a more flexible labour market. The needs of individuals over their life cycle are becoming increasingly diversified. Past policies based on a simplified, uniform life-cycle trajectory or the traditional family norm are no longer sufficient to address the increased heterogeneity amongst the population. Labour markets must now enable individuals to adjust their working hours, schedules and use leaves for educational, child-care, sabbatical or other reasons. In other words, labour market flexibility can also be a strategy that enables workers to 'adjust working life and working hours to their own preferences and to other activities' (Jepsen and Klammer, 2004:157). Working time flexibility especially has been gaining increased attention as a work-life balancing strategy for workers by both trade unions and the European Commission (Fagan, Hegewisch and Pillinger for the TUC, 2006; Plantenga and Remery for the European Commission, 2005; Anxo et al. for the European Foundation, 2006).

Unfortunately, most studies of labour market flexibility or working time are one-sided, meaning that they focus solely on companies' flexibility, flexibility measures used for production needs, or the possibility of using working time flexibility for work-life balance needs of workers. There are few studies that examine flexibility from both sides simultaneously. Majority of literature perceives flexibility as something that is used solely for the motivation of business, focusing for the most part on employment protection legislation (EPL)³ and shares of atypical employment or temporary, fixed-term work⁴ of countries. One of the reasons for using this measure is because of the OECD and Eurostat make data readily available for calculating these measures. Studies that deal with flexibility in respects to work-life balance methods tend to focus on working time in respects to preferences of workers or the actual hours worked⁵ and not many studies that go on to examine the cross-country relevance of various working-time options or arrangements that facilitate work-life balance⁶. In other words, there are few studies that deal with the actual flexibility practices for both workers and companies, based on empirical data that is comparable throughout Europe. The exclusion of the 'employee-centred flexibility' or 'worker-oriented flexibility' in the examination of labour market flexibility inhibits the development of flexibility arrangements that can be used to accommodate both employers and employees needs, which is one of the central objective stated in the EC Employment Strategies (Gareis and Korte, 2002:1102). The next section draws a framework in

² For example, although the European Commission acknowledges the fact that flexibility can also be used for workers as well, as stated in their recent Joint Employment Report the focus is on flexible contracts (EC, 2006:13).

³ For example OECD, 1999; OECD, 2004 on EPL and Siebert, 1997; Jackmann, Layard, Nickell, 1996; Lazear, 1990; Salvanes, 1997; Regini, 2001; Tangian, 2004; 2005; Eamets and Masso, 2004 that uses EPL as a flexibility measure

⁴ For example Booth et al., 2002; Dolado et al, 2001; Also see The Economic Journal Vol.112, 2002, OECD, 2002

⁵ For example O' Reilly and Fagan, 1998; Anxo and O'Reilly, 2000; 2002; Schmid, 2002; Gomez, Pons and Marti, 2002; Fagan, 2003; Messenger et al, 2004; Corral and Isusi, 2005; Bielenski et al., 2006.

⁶ For example Plantenga and Remery for the European Commission, 2005; Anxo et al. for the European Foundation, 2006

which flexibility can be examined for both companies and workers especially focusing on the various flexibility options that can be taken to enhance numerical flexibility.

2) Flexibility revisited 1: for employers and/or for employees?

The main reason that companies take up flexible arrangements is from the cost savings that they create. More specifically, companies can cut costs by quickly adapting work load to fluctuations in business (Houseman, 2001). Another way to reduce labour costs is to reduce fringe benefits/social security contributions by using atypical workers in countries where temporary contract workers or other types of workers are not covered by the system (Atkinson, 1984; Houseman, 2001). Segregation of the workforce into core and peripheral workers without in-company repercussions can be another motive (Atkinson, 1984; Houseman 2001). Other than this, new workers on temporary contracts or over-time and flexible schedules within the company can be used to adapt to staff absence due to leaves and absenteeism. Flexible contracts can also be used to screen new recruits before offering them with long-term contracts (Houseman, 2001). Improving quality and service, along with meeting supply needs such as customers' needs, are additional reasons why companies take up various flexibility arrangements (Reilly, 2001). 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; 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. In addition, 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.

There can also be indirect motives for taking up flexible arrangements. For companies, 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 specific types of workers, for example workers with special skills (Houseman, 2001; Plantenga & Remery for the European Commission, 2005). Workers have indirect motives as well, such as maximizing income or improving job security in addition to the previously mentioned direct motives. For instance in companies with high overtime premiums workers might have incentives to take up overtime work. Or in some cases, when taking up the given arrangement provides more job security, workers may be inclined to take up such arrangements (Reilly, 2001). Another example, although temporary work is not a flexibility option directly for the benefit of the worker, it can provide workers with job security which translates into income security. In this sense, flexibility measures that provide workers with more leeway to adapt to work and life issues, especially those which are above the legal requirements, can provide security for companies. These securities will include things such as workforce recruitment, maintenance as well as skill and productivity maintenance. On the other hand, flexibility options for companies provide security for workers. These securities include job, employment and further on income security.

This can be seen in line with the *Flexicurity* notion where security and flexibility trade-offs are made to enhance interest of both sides of the market (Wilthagen and Tros, 2004; Wilthagen and Rogowski, 2002). Flexicurity approach is a way for employers and employees to adapt exchange relationships that lead to synchronizing of the employers' and employees' interest (Klammer et al., forthcoming). In this sense, there can be "*flexicurity options*" where the practice or arrangement itself can be used to provide good flexibility - and thus good security for both workers and the firm, where as *flexibility and security options* can be seen providing flexibility for one side, while providing security for the other. This is not to say that flexicurity options are always better than flexibility and security options, especially if we go beyond the interests of companies and firms into larger societal interests.

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. For example, part-time work can be a way to adapt to work-life balance for some workers who take it up voluntarily, others may take it up involuntarily for there are no full-time jobs available. In general though, numerical flexibility, that is contractual flexibility and working time flexibility, may be seen as giving flexibility for workers and companies as depicted in table 1. In this paper, we do not go into the security aspects of the various flexibility options but focus on the flexibility aspects.

Table 1: Numerical flexibility options for workers and companies

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

Based on Anxo et al. (2005) Monastiriotis (2003); Plantenga & Remery, (2005); Klammer 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. However, even considering this voluntariness, in many cases these types of unusual hours can have negative effects to the workers on the long run (Houseman and Polivka, 2000).

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 be examined through job duration and not as a use of certain arrangement.

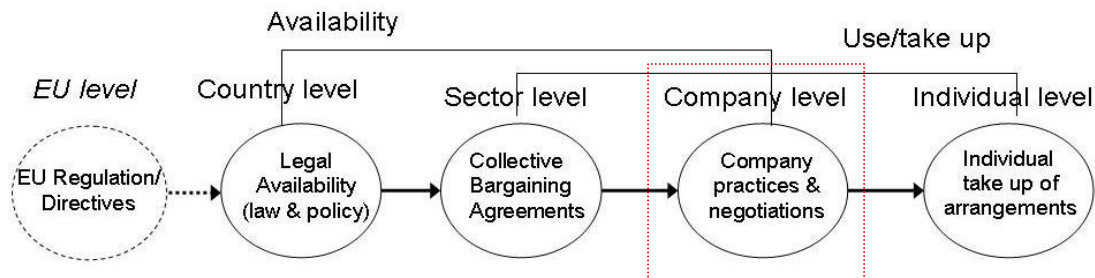
b) Retirement schemes are included here for the reasons that it is used in many European countries to lay off older workers and redistribute work from older to younger workers (see Leber and Wagner, forthcoming). One might say that leave schemes may be used for similar purposes, but so far there has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

3. Data and method

1) Numerical flexibility options in the establishment level

As there are various ways in which flexibility can be examined, there are various levels in which it can be examined as well. What we are examining in this paper is the flexibility options used in the establishment level. Data on the establishment level contains take up information in one sense, and in another availability of arrangements. It is information on take up for it shows us whether a firm has taken up a certain option available in the institution, such as laws, policies or collective bargaining agreements. However it also provides us with the information on the availability of options for workers. In most cases employees cannot choose autonomously to take up certain working time arrangements for the option availability depends on the structure of the company they are employed in (Riedmann et al., 2006). For instance, even if part-time work is available by law in most countries it is not entirely available for all workers. If the firms do not choose to implement these flexibility options, it is almost impossible for a worker to take it up. In this sense working time arrangements at the establishment level is **the final availability** which “sets out *the possibility and limits of the employees* to adapt their actual working hours to their personal needs and wishes”(Riedmann et al., 2006: 1). On the other hand, examining flexibility in the establishment level may show different outcomes compared to the studies based on institutions and regulations. Regulatory framework of flexibility in a country affects the practices in the micro level, thus the company and individual, but does not necessarily determine it. This is especially true when we take into consideration that some flexibility arrangements are developed to overcome the limitations or restrictions of the institutions⁷. The extent to which institutions effect or restrict the availability to take up or not take up a certain flexible arrangement will depend on the country and the arrangement⁸.

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



2) The ESWT data

The ESWT (Establishment Survey on Working Time and Work-life Balance) provides us with information on the establishment level of various arrangements that are used within the firm to enhance flexibility for companies in adaptation to cycles, and workers' needs for combining work and non-work activities. It covers 21 EU member states including six new accession countries and is surveyed between 2004 and 2005. It was conducted in over 21,000 establishments where personnel managers and, if available, employee representatives were interviewed. Of the survey, this paper uses the data from the manager survey for it covers a

⁷ 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).

⁸ For example, in most countries, it is impossible to use more than the legally allowed overtime while things such as educational leave can or cannot be taken up depending on the country and the sector.

wider and more representative scope of companies and due to the reliability of the answers. Considering the scope of the jobs, managers can be seen to have better information on take up and availability of schemes than the employee representatives. However, answers given by the employee representatives on the motives for taking up certain arrangements will be examined later to compare to those given by the personnel managers. The ESWT survey covers a wide arrange of arrangements of which data were not available in other sources especially those that were comparable across countries. The questions do not necessarily inquire on the availability of options. In some cases it is asked whether the establishment use certain arrangements, which are available by law but not always used by firm and thus not always available for workers⁹. The arrangements that have been surveyed reflects the outcomes of the previous studies that examines types of arrangements that are used in practice, to enhance work-life balance for workers along with flexibility strategies that are used by companies (See Anxo et. al., 2005, Anxo et al., 2006). The list might not be exhaustive but does include the major arrangements that are currently being used in companies throughout Europe. The table below shows the range of arrangements that were included in the survey and how they can be categorized according to who it is for and if it is used within or outside the firm- thus internally or externally.

If we categorize the options using the more traditional internal vs. external numerical flexibility category, temporary contracts and early retirement can be perceived as external forms of numerical flexibility for they can be used as way to adjust the numbers of workers to adapt to business cycles. All others can be viewed as internal forms which adjust the numbers of hours worked to adapt to various needs. The arrangements can also be categorize depending on whether they are aimed at improving flexibility for employers and/or for the employees. Arrangements that are seen to improve flexibility for the employees yet not geared for the employers include leave schemes for parental reasons, care of family and relatives, and education leaves. These arrangements have been developed more or less for workers for their work-life balances and working hour preferences. On the opposite side, there are arrangements that facilitate employers' need for flexibility while not generally accommodating the needs of employees. These include unusual hours, over time and various 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. There have been several debates on to whose needs these arrangements accommodate and more or less can be different depending on the country and the company¹⁰.

Table 2: Classification of working time arrangements covered in the ESWT survey

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

Note: (INT = internal numerical flexibility) (EXT = external numerical flexibility)

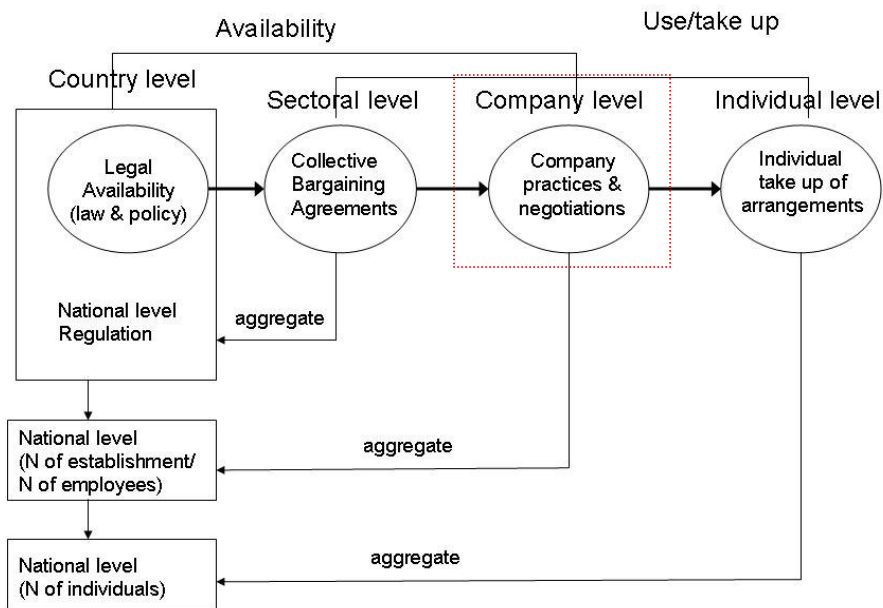
⁹ For specific details refer to Annex 1.

¹⁰ Also this can depend on the individual taking up the arrangement, however for the reasons that we do not have the data based on individual worker preference or motivation, we cannot consider this here.

3) Aggregating the establishment level

The focus of this study is the cross-national variation on the use of flexibility arrangement practices. However, as noted above the ESWT survey is on the establishment level. To use the information gathered from the establishment level, thus a micro-mezo level, for cross-national comparison, thus a macro level, one must aggregate the given data to the country level. This can be done in various ways, mainly by aggregating the numbers of companies or aggregating the numbers of employees to the country level as we can see from the figure below. Aggregating the numbers of companies or employees can be done in various ways, but for this study it was aggregated per arrangement to calculate later on a total score for each country by adding each arrangement scores. In other words, the number of companies using a certain type of working time arrangements is aggregated to the country level for each arrangement, which can be seen as the percentage of companies surveyed within the country taking up that specific arrangement. However, we use employee weights to take firm sizes into consideration, giving higher weights for companies with more employees. Thus, the scores each country has for each arrangement shows the *percentage of employees employed in companies that offer or use the given particular arrangement*. However this does not necessarily mean that all workers always have access to the arrangements mentioned here. This is due to the fact that some arrangements are restricted or only applicable to a certain portion of workers within the firm. So, the percentage shown here should not be seen as the percentage of employees using/or has the potential possibility to use the given arrangement, which in reality will be smaller than the scores/percentages given in this paper.

Figure2. Aggregating micro-mezo data to the country level



4) Descriptive

As we can see from the table below, the variation in the availability and use of various flexibility arrangements are substantial across countries. This is especially true for the use of phased retirement, part-timers and temporary agency workers. In Greece, only 10 percent of employees work in firms that offer phased retirement, while in the Netherlands it is approximately 8 times that amount. Only 17 percent of Portuguese workers are employed in firms with part-time workers while this is true for almost all, 95 percent, workers in the

Netherlands. Of the arrangements, overtime, parental leave, fixed term contract use show the highest scores of availability. For example, in all countries more than 56 percent, and up to 93 percent, of workers are employed in firms that use over-time. This is also true for parental leave, where the availability scores range from 50 in Spain to 95 in Sweden. Overall the scores vary not only across countries but across arrangements. The Scandinavian countries show overall high scores for all arrangements but especially leave schemes and flexible working schedules, while relatively lower scores for temporary agency workers and unusual working hours. On the other hand the Southern European countries show overall low scores for all arrangements with the exception of fixed-term employment contracts. However here, we cannot see clear cut distinctions on the usage of the arrangements.

Table 3: Availability scores of various working time options for employees for 21 EU countries (employee weighted percentages) for 2004/05 (management survey)

| | Part-Time | Unusual working hrs | Flex time | Over-time | Parental Leave | Care Leave | Education leave | Other leave | Temporary Employment | | | Early retirement | Phased retirement ¹¹ | |
|-------------|-----------|---------------------|-----------|-----------|----------------|------------|-----------------|-------------|----------------------|------------|-------------|------------------|---------------------------------|------------|
| | | | | | | | | | Total | Fixed-Term | Temp worker | | | Free-lance |
| Belgium | 87 | 57 | 48 | 82 | 81 | 63 | 48 | 33 | 86 | 66 | 64 | 20 | 69 | 76 |
| Denmark | 80 | 48 | 60 | 88 | 71 | 87 | 76 | 45 | 78 | 58 | 63 | 22 | 70 | 64 |
| Germany | 90 | 53 | 63 | 93 | 78 | 48 | 49 | 35 | 83 | 76 | 32 | 26 | 62 | 65 |
| Greece | 19 | 46 | 30 | 62 | 66 | 34 | 23 | 20 | 59 | 45 | 9 | 30 | 43 | 10 |
| Spain | 52 | 56 | 45 | 71 | 50 | 33 | 26 | 24 | 86 | 80 | 38 | 15 | 62 | 30 |
| France | 80 | 67 | 49 | 80 | 78 | 40 | 65 | 35 | 89 | 80 | 49 | 12 | 59 | 43 |
| Ireland | 74 | 63 | 57 | 91 | 70 | 66 | 55 | 35 | 70 | 66 | 37 | 22 | 72 | 50 |
| Italy | 62 | 46 | 42 | 83 | 68 | 51 | 30 | 26 | 77 | 60 | 31 | 31 | 18 | 12 |
| Luxembourg | 76 | 65 | 44 | 92 | 83 | 31 | 45 | 28 | 69 | 54 | 44 | 8 | 73 | 34 |
| Netherlands | 95 | 47 | 53 | 82 | 72 | 68 | 50 | 45 | 89 | 84 | 62 | 28 | 83 | 79 |
| Austria | 85 | 51 | 63 | 92 | 73 | 30 | 33 | 21 | 63 | 42 | 34 | 19 | 44 | 66 |
| Portugal | 17 | 39 | 25 | 63 | 55 | 31 | 21 | 26 | 92 | 90 | 16 | 13 | 44 | 12 |
| Finland | 71 | 51 | 71 | 92 | 91 | 74 | 88 | 66 | 93 | 90 | 32 | 22 | 85 | 64 |
| Sweden | 89 | 48 | 73 | 91 | 95 | 52 | 78 | 45 | 91 | 86 | 35 | 23 | 46 | 53 |
| UK | 85 | 67 | 57 | 86 | 78 | 55 | 44 | 31 | 79 | 65 | 51 | 18 | 78 | 64 |
| Czech Rep. | 67 | 55 | 55 | 91 | 76 | 50 | 55 | 32 | 97 | 95 | 16 | 45 | 97 | 40 |
| Cyprus | 37 | 64 | 15 | 83 | 63 | 29 | 38 | 31 | 57 | 45 | 7 | 38 | 56 | 18 |
| Latvia | 61 | 68 | 58 | 57 | 76 | 30 | 57 | 35 | 66 | 60 | 12 | 21 | 80 | 38 |
| Hungary | 56 | 43 | 43 | 56 | 76 | 70 | 63 | 23 | 60 | 55 | 15 | 5 | 55 | 22 |
| Poland | 77 | 52 | 54 | 70 | 65 | 72 | 61 | 67 | 86 | 75 | 5 | 45 | 86 | 37 |
| Slovenia | 56 | 52 | 38 | 83 | 76 | 40 | 57 | 34 | 92 | 81 | 60 | 24 | 51 | 14 |

Note: Here we have excluded missing cases (if the respondent have given no answer or don't know it was given one value). In the case of overtime and part-time the two were answered separately but to keep continuity in the data, in this case don't know is excluded as well.

Of the arrangements, namely part-time work, flexible working time arrangement, early and phased retirement, it is uncertain to whose flexibility they can accommodate. For those arrangements, establishments are divided into three groups. They are establishments that use the arrangements mainly for the needs of the establishment, those that use it mainly for the needs of employees, and lastly those that use it for other reasons. Although for part-time work the

¹¹ For phased retirement, the question was only asked to companies which have workers who are 50 years or older.

question was asked in a direct manner, this was not the case for all arrangements. For flexible working hours, the reasons for its use were asked in the following categories. 1) to reduce paid overtime hours, 2) make working hours more adaptable to variation in workload, 3) enable employees to better combine work and family or personal life, 4) to cope with commuting problems 5) other. The former two answers are considered as flexible working hours used for the establishments, and the latter two as being used more so for employees. For retirement variables, the question asking whether the establishments encourage or prevent the use of the arrangements was used to decide if the arrangement was there to facilitate establishments' needs or employees' needs¹². For the average EU countries, part-time work and flexible working time arrangements are used to facilitate the needs of the employees more than the needs of the establishment. However, this is not true in all countries. For example all the Mediterranean countries, i.e., Cyprus, Greece, Portugal along with Poland show that part-time work is taken up more so for the needs of the firms. For flexible working time arrangements, all countries show that it is mostly for the needs of the workers rather than to adapt to the needs of the establishment with the exception of Slovenia. This is not the case for the retirement arrangements. Both phased and early retirement show that it is used mostly for the needs of establishments. The few exceptions are Belgium, Italy, Luxembourg and Poland, for phased retirement and Belgium, Czech Republic and Latvia for early retirement. However the differences for the motives are small in these cases, with the exception of Italy for the use of phased retirement¹³.

4) Employee Representative Survey

Although the answers managers and employee representatives give on use of certain arrangements may not differ much, it might be that they may have different ideas on what exactly is the motivation in taking up or using the arrangements mentioned in the previous section. The ESWT survey, unfortunately, does not have a matching data where workers are asked directly on their motives. However, there is information from the employee representatives on what they believe are the motives of the companies for using certain arrangements. The answers given were categorized and recoded in the same way as the answers from the managers and then aggregated to the country level. The relationship between the answers to the motives from the managers and from the employee representative did not differ much. All showed to be highly correlated in a statistically significant level (all were correlated in a 0.7 level or over with .001 significance). Also, due to the fact that the employee representative survey was not done on all of the companies surveyed, due to the lack of a representative body, when we try to examine those who take up certain arrangements, the number of cases is insufficient for a useful analysis. For these reasons, a separate analysis of the employee representative data is not done here.

4. Analysis

1) Factor analysis

The next step in the analysis is to see whether the arrangements can in fact be divided into the theoretical framework as shown in table 2. There can be two competing hypotheses.

¹² Firms that encourage retirement schemes are not necessarily using it for the benefit of the establishment. However, from this data we could see that of the companies surveyed vast majority(73%) of the companies that have answered they encourage early retirement, used it in order to cope with problems the establishments face with older workers(productivity, age) or as an way to reduce staff. Based on this, we can say that the companies who encourage retirement schemes usually use the arrangements for the needs of the establishment.

¹³ See Annex 2 for tables.

Firstly, flexibility arrangements can be distinguished depending on whether they are used externally or internally by the company. For the individual, this division will mean that the division of arrangements depend on whether they are within an employment contract arrangement or if it entails termination of a contract¹⁴. Secondly, a division could be made depending on whether the arrangements are geared towards the establishment/company or if it is geared towards the employees, as depicted in the framework in table 2. To test these hypotheses a factor analysis is done using SPSS. Here we use the non-aggregated company level data to see whether latent groups of arrangements can be found based on the way companies use/provide various flexibility arrangements. In other words, the outcomes of the factor analysis will show us how the arrangement under investigation can be categorized into bundles based on how companies use it to facilitate needs of flexibility.

Using the principal component method we examine the rotated component matrices, which will give us the scores of arrangements in their highest variance¹⁵. The first outcome¹⁶ shows that our 13 arrangements are components of four factors using the eigen value method and here our factors explain 46% of the variance. However, from this result the last factor does not add much information to the categorization of the arrangements for it only contains one arrangement. Although a factor analysis outcome that results in many factors has the advantage of increasing the explanatory power, it does not always give us useful clues on how we can distinguish the arrangements. Restricting the number of factors can be effective in finding a clearer distinction between the arrangements with each factor having enough arrangements to be seen as a package of arrangements and not a single arrangement driven factor. Like this, the analysis outcome in this study becomes much clearer when the number of factors is restricted to three factors. The first factor is the leave schemes factor, showing high factor loadings for all of the long-leave arrangements. This could also be interpreted as *the employees' flexibility* factor, since the leave schemes are the arrangements that have been seen to accommodate to the needs of the worker the most. The second factor can be named *the companies' or employers' flexibility* factor, with all the temporary employment contract types showing high factor loadings along with overtime and unusual hours. The third factor includes the four arrangements that have been noted in the hypothesis as being *flexibility for both the employers and employees*, thus part-time work, flexible working time arrangements, phased and early retirement schemes. The naming of the factors not only comes from how the arrangements grouped in to three separate factors depending on their highest loading scores, but from their loadings on other factors as well. For instance, overtime not only shows the highest factor loading on the second factor but moreover show a negative loading on the first as well, confirming that it is more or less of an arrangements to adapt to the needs of the establishment while having negative implications for employees.

¹⁴ However, I believe this in fact does not provide a useful distinction for individuals.

¹⁵ To avoid selectivity error, thus specific firms not giving answer to the questions, we have substituted the missing scores of some of the firm with the mean scores.

¹⁶ See Annex 3 for the outcome.

Table 4: Rotated Component Matrix of three factor analysis of working time arrangements of 21 EU countries in the establishment level

| | Component | | |
|-------------------------------------|-------------|-------------|-------------|
| | 1 | 2 | 3 |
| Part-time workers | .016 | .360 | .505 |
| Unusual hours | -.012 | .459 | .030 |
| Flexible working time arrangements | .098 | .083 | .467 |
| Overtime | -.020 | .482 | .150 |
| Parental leave | .084 | .478 | .244 |
| Leave for care or illness in family | .791 | .058 | .144 |
| Leave for education | .808 | .081 | .143 |
| Leave for other purposes | .652 | .034 | .097 |
| Fix-term contracts | .136 | .541 | .013 |
| Temporary agency workers | -.050 | .550 | .076 |
| Free lance workers | .151 | .467 | -.171 |
| Early retirement | .119 | -.010 | .575 |
| Phased retirement | .120 | .006 | .747 |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 4 iterations.

38% of the variance explained.

The only arrangement that does not adhere to our hypothesis is parental leave. According to our hypothesis, parental leave was perceived to be more of an arrangement for worker's to adapt to work-life balance, however, it shows a higher factor loading on the second factor. This might have to do with the fact that in all of the 21 countries under investigation, parental leave is legally available (Reidmann et al., 2006; Klammer et al., forthcoming) and it is not something that a company can choose not to take up. The use of parental leave depends more so on whether there are new parents within the firms or not and whether the workers choose to take it up¹⁷. In addition, this may be due to supplementary or complimentary effect where arrangements are used in combination with another. For example, if extensive leave schemes are being used, this company has to use some sort of arrangement to supplement the absent labour through additional workers from outside the firm through temporary employment or using over-time with the current staff. This might be the reason why parental leave comes up as a bundle along with the atypical contracts and over-time. However more investigation is needed to come to further conclusions. However, what we can conclude from the factor analysis here is that there can be differentiation between the different types of arrangements through how they accommodate the needs of either workers, companies or for both, as suggested in the hypothesis.

2) Plotting out the countries scores and cluster analysis

In this section, country scores are derived to see if there are cross-national variances in the use of flexibility arrangements when defined as flexibility for employees and flexibility for employers, and to see what type of relationship the two have when examined in the country level. To do this, two scores are derived, the flexibility score for employees, and another for employers. This is done by adding up the percentage scores of arrangements given in Table 3, distinguished by to whose flexibility it is for. For the arrangements which were seen to be

¹⁷ Although this may be different for legal paternal leave, additional parental leave or leave for child-care, which is not defined by law but by company practices. Also we can think of the difference whether if it is paid leave, especially funded by the employers. However we do not go into detail here.

arrangements that can be used for both, i.e. part-time, flexible working hours, and early and phased retirement, weights are given based on the aggregated motivation scores based on Annex 2¹⁸. The equation for each index can be seen as the following.

Flexibility for employees = [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]

Flexibility for employers = [part-time for employers' need + unusual hours + flexible working time arrangements for employers' need + overtime + fixed-term contracts + temporary agency workers + freelance workers+ early retirement for employers' need + phased retirement for employers' need]

*: first aggregated scores for each arrangement were derived in the country level and then aggregated for the various arrangements to arrive at the two dimension scores.

Table five below shows us the flexibility scores for each country. The absolute scores represent the simple aggregated scores, which can be seen as somewhat similar to the average number of arrangement the average company in that country uses. Relative scores¹⁹ show the relative position of each country for each of the flexibility scores, within the 21 countries. Firstly, we can say that overall European company uses more flexibility arrangement for the need of the company than for the need of the worker, based on the mean scores. However, this is not the case when we take into account that the numbers of arrangements that are examined here are not the same for both types of flexibility, and this maybe due to the fact that there are more arrangements that are used to calculate the index for flexibility for employers. However, examining the standard deviation, it is clear that there seems to be more cross-national variation in the provision of flexibility arrangements used to facilitate workers' need than of the arrangements to facilitate companies' needs. In other words, it seems to be that countries do not differ much in the numbers of arrangements that are being used to address flexibility needs of the establishments, while there seems to be a bigger difference between countries in the various types of flexibility arrangements provided to facilitate workers' need.

Of the countries examined, those that on average provide more arrangement that facilitate needs of employees are namely the Northern European countries, i.e. Finland, Denmark, Sweden and somewhat the Netherlands and Belgium. The Southern European countries, i.e. Portugal, Greece, Cyprus and Spain, on the other hand, provide the least. For the arrangements that facilitate needs of employers the Netherlands, UK, Finland and Germany rank the highest, while the Southern European countries, now with Italy and Hungary rank the lowest. The countries that provide relatively more flexibility arrangements for employers than for employees are Spain, UK, Slovenia and Germany. On the opposite side the Northern European countries, and surprisingly Italy and Hungary can be seen as providing relatively more flexibility arrangements for employees than for employers. To examine the positioning of the countries depending on their provision scores of both flexibility scores in more detail, a scatter plot is examined.

¹⁸ For example, part-time work for companies = companies using part-time work*(proportion of companies using part-time work for the needs of company + proportion of workers using part-time work for the needs "other"/2)

¹⁹ Relative scores are derived by : (Country score – non-weighted EU21 average)/ Standard deviation of EU21

Table 5: Scores for employees' flexibility and employers' flexibility for 21 EU countries

| | Flexibility for employees | | Flexibility for employers | | Gap |
|--------------------|---------------------------|----------|---------------------------|----------|----------|
| | absolute | relative | absolute | relative | relative |
| Belgium | 4.00 | .90 | 3.94 | .49 | .42 |
| Denmark | 4.33 | 1.31 | 3.98 | .56 | .75 |
| Germany | 3.47 | .24 | 4.22 | .99 | -.75 |
| Greece | 1.91 | -1.68 | 2.48 | -2.13 | .45 |
| Spain | 2.26 | -1.25 | 3.58 | -.17 | -1.08 |
| France | 3.50 | .29 | 3.90 | .41 | -.13 |
| Ireland | 3.66 | .48 | 3.93 | .46 | .02 |
| Italy | 2.69 | -.72 | 2.93 | -1.33 | .61 |
| Luxembourg | 3.14 | -.15 | 3.62 | -.08 | -.07 |
| Netherlands | 4.00 | .90 | 4.45 | 1.40 | -.50 |
| Austria | 2.95 | -.39 | 3.59 | -.15 | -.24 |
| Portugal | 1.75 | -1.88 | 2.77 | -1.61 | -.27 |
| Finland | 4.71 | 1.78 | 4.25 | 1.03 | .75 |
| Sweden | 4.17 | 1.11 | 3.96 | .52 | .59 |
| United Kingdom | 3.50 | .28 | 4.30 | 1.12 | -.84 |
| Czech Republic | 3.54 | .33 | 4.20 | .95 | -.62 |
| Cyprus | 2.12 | -1.42 | 3.12 | -.98 | -.44 |
| Latvia | 3.22 | -.07 | 3.31 | -.64 | .58 |
| Hungary | 3.01 | -.33 | 2.83 | -1.51 | 1.18 |
| Poland | 3.83 | .69 | 3.83 | .28 | .41 |
| Slovenia | 2.83 | -.54 | 3.83 | .28 | -.82 |
| Un-weighted mean | 3.27 | | 3.67 | | |
| Standard deviation | 0.81 | | 0.56 | | |

Figure 3: Scatter plot of 21EU countries on their scores for flexibility

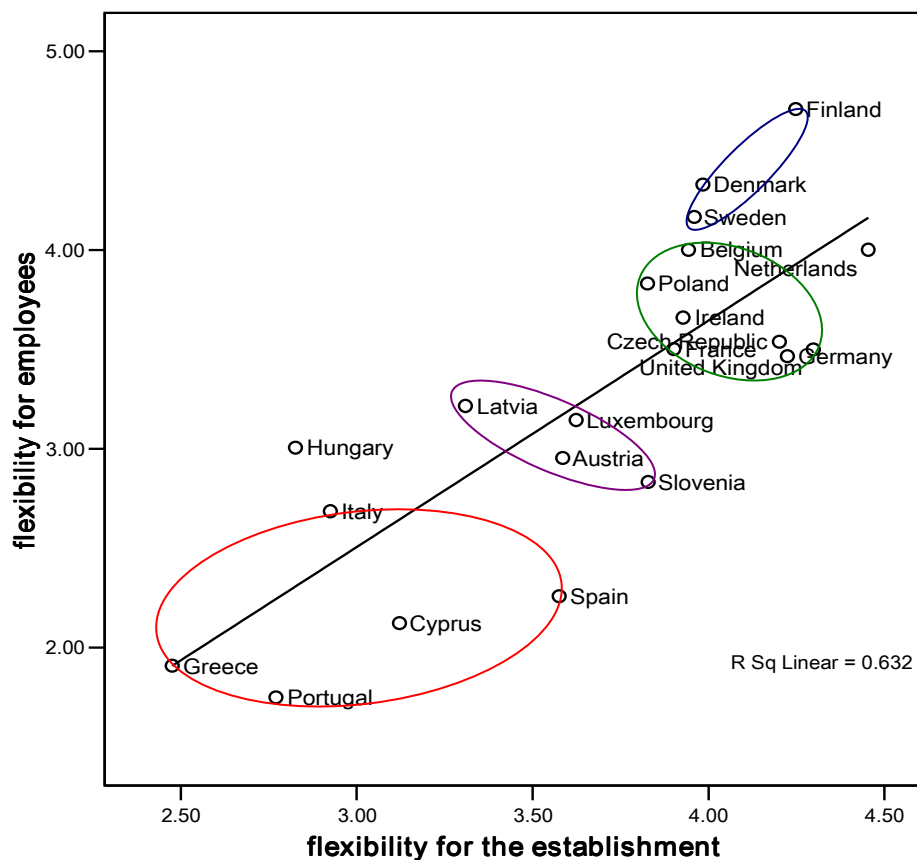


Figure 3 shows the scatter plot of the countries by their scores of flexibility and the cluster analysis outcome of the countries derived from the way they score for the two different flexibility scores²⁰. There are four distinctive clusters that can be found. On the top right hand corner, the Northern European or social democratic countries form a cluster with high levels of provision of flexibility arrangements for both establishments and employees. On the other side, the lower left side, lie the Southern European countries, Greece, Portugal, Cyprus, Italy and Spain along with Hungary to form another cluster, with low levels of flexibility arrangement provision on both sides. The other countries lie in between, yet depending on the average numbers of flexibility arrangements provided, Latvia, Luxembourg, Austria and Slovenia form one cluster, while Belgium, the Netherlands, Poland, Ireland, Czech Republic, France, UK and Germany form another. This cluster analysis result is not too different with the existing welfare state regime typology given by Esping-Andersen (1990; 1999) with an additional distinctive Southern European cluster²¹ but not a separate Anglo-Saxon or liberal cluster. This might be for the reasons that there are only two countries that can be considered to be of the liberal regime type, UK and Ireland, both of which are situated in one cluster having overall medium-high level of flexibility. Another thing to notice is that the new accession countries do not show up as a distinctive cluster on its own, but is located within the more Central and Continental European countries, with the exception of Cyprus and Hungary which are placed near the southern European country cluster. The characteristics of the four clusters can be as follows. The first cluster, the Nordic cluster, shows highest levels in the provision of flexibility arrangements especially those that are for the needs of the employees. There seems to be not much difference

²⁰ Here a hierarchical cluster analysis was done, the analysis results are shown in Annex 4.

²¹ For more refer to Abrahamson, 1991; Leibfried, 1992; Ferrera, 1993, 1996; Bonoli, 1997.

between the second, north-west European countries with Ireland and the UK, and the third, the more central European countries, with both showing average level of flexibility provision, without a clear distinction of which type of flexibility arrangements are provided more than the other. The southern European cluster, shows overall low flexibility provision and on average provides more arrangements that are seem to be for the establishment or company.

Lastly, examining the regression line on figure 3, we can see that there is a positive relationship between the two types of flexibility with the correlation of 0.8. This shows us that in general, countries where the average company has more flexibility arrangements for the establishments also have companies that on average have more flexibility arrangements for employees and visa versa. This outcome indicates the possible compatibility of the two flexibility types, thus the flexibility arrangements for workers and flexibility arrangements for companies. At least in the country level, Northern European countries seem to have reconciled the two flexibility needs of both the worker and company's sides to find a state of flexibility where both sides are facilitated. On the other side, it seems that the southern European countries have not been too successful in delivering flexibility on both sides. If we examine the disaggregated company level the correlation is still significant although the correlation degree decreases somewhat, depending on the country, sector etc.

5. Conclusions

Although the focus of labour market flexibility has been on its use by companies to adapt to fast changing business cycles and production systems, and especially on the deregulation of employment protection regulations, this is not the only way flexibility can be used nor addressed. More and more workers are in need of a flexible work patterns or schedules to fit work in with their diverging life styles and work preferences throughout their life-courses. Examining the behaviour of companies within Europe we can see that the various flexibility arrangements used in companies can indeed be seen as being in bundles which can be defined as arrangements for the employers, those for the employees and those for both. Using this framework, we can see some differences between countries on which type of flexibility measures are used more than the other as well as distinguishing countries on their overall levels of provision of flexibility arrangement. Seen in the country level, we can see a positive relationship between the provision of flexibility arrangements for the needs of workers and those for the needs of companies. Based on this outcome we can predict that providing flexibility for workers' need and flexibility for companies' needs are not necessarily at odds with each other. On the contrary, the two flexibilities may be able to help one another develop and can be reconciled to have more of a synergy effect towards each other which provide real *flexicurity* for both workers and companies. The important aspect that needs to be readdressed and emphasized again is that we should not only focus on the employer's need for flexibility, and that the flexibility debate should include the worker's need and potentials for utilizing flexibility. The current myopic vision in the examination of labour market flexibility may and have raised disaccord between the parties involved in the discussion, mainly workers and companies, and hinders the development of "good flexibility"²². The change in the way flexibility is defined will be helpful in setting up policies in which flexibility is not only seen as something that should be traded off with security measures of another, but where flexibility policies are developed in way in which it addresses the need for mutual flexibility goals that accommodate the needs of both sides of the playing field.

²² This is especially true for it is shown that in the company level good performances outcomes depend more on the type of flexibility developed than the overall level (see Chung et al., 2007).

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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 | |
| Unusual hours | Overall | Use | X | |
| | Work at night | Use | O | |
| | Work on Saturday | Use | O | |
| | Work on Sunday | Use | O | |
| Flexible working hours | Shift system | Use | O | |
| | Overall | Use | O | |
| | 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 |
| Long-term leave | Leave for care or illness in family | Availability | X | Paid and unpaid |
| | Leave for education | Availability | X | |
| | Leave for other purposes | Availability | X | |
| Retirement schemes | Early retirement | Availability | X | only asked to companies with 50+ workers |
| | Phased retirement | Availability | X | |
| Temporary contracts | Fix-term contracts | Use | X | In the last 12 months |
| | Temporary agency workers | Use | X | |
| | Freelance workers | Use | X | |
| Work-life balance facilities | Kindergarten or crèche | Availability | X | |
| | Professional help for childcare | Availability | X | |
| | Professional help for household management | Availability | X | |
| | Others | Availability | X | |

The ESWT covers various working time flexibility arrangements and work-life balance issues in eight areas, namely part-time work, work at unsocial hours, flexible working hours, overtime, parental leave, long-term leave, retirement schemes, and measures to facilitate work-life balance. However, there is additional information on the use of temporary contract or contractual flexibility within their firms based on the back ground information asked. Some of the questions are asked about their usage within the firm, and others about their availability. This is due to the fact that some of the arrangements should be legally available in all countries, such as part-time work or parental leave. For most questions on the usage/take up of arrangements the proportion of workers that are involved in this arrangements are also asked, which was not the case for arrangements that were asked on their availability. A couple of other things to note is that parental leave was asked whether an employee has taken up parental leave in the past 3 years, thus giving it a time span, and for phase retirement the question was only asked for those who have workers who are 50 years or older, thus restricting the size of the sample. For temporary contracts, it was asked whether the company had those types of contracts in the last 12 months.

Annex 2] Motivation for using various arrangements

Motive for using arrangements in establishment that use the following arrangements (employee weighted) (management survey)

| | Part-time | | | Flexible working time ²³ | | |
|-----------------------------|--------------------|---------------|------------|-------------------------------------|---------------|------------|
| | For establishments | For employees | Both/other | For establishment | For employees | Both/other |
| Belgium | 10 | 64 | 26 | 44 | 92 | 10 |
| Denmark | 15 | 53 | 32 | 56 | 85 | 5 |
| Germany | 23 | 44 | 33 | 81 | 85 | 14 |
| Greece | 64 | 11 | 25 | 37 | 81 | 4 |
| Spain | 41 | 39 | 20 | 35 | 73 | 7 |
| France | 19 | 59 | 22 | 60 | 85 | 13 |
| Ireland | 22 | 51 | 27 | 46 | 84 | 6 |
| Italy | 12 | 70 | 18 | 33 | 73 | 5 |
| Luxembourg | 15 | 67 | 18 | 68 | 91 | 9 |
| Netherlands | 8 | 64 | 28 | 43 | 83 | 14 |
| Austria | 23 | 46 | 31 | 65 | 71 | 9 |
| Portugal | 50 | 19 | 31 | 49 | 54 | 14 |
| Finland | 26 | 53 | 21 | 59 | 80 | 14 |
| Sweden | 19 | 58 | 23 | 56 | 86 | 8 |
| United Kingdom | 31 | 31 | 38 | 58 | 78 | 8 |
| Czech Republic | 28 | 45 | 27 | 57 | 81 | 12 |
| Cyprus | 68 | 8 | 24 | 35 | 64 | 11 |
| Latvia | 44 | 34 | 22 | 37 | 66 | 17 |
| Hungary | 34 | 35 | 31 | 57 | 62 | 7 |
| Poland | 59 | 23 | 18 | 32 | 69 | 15 |
| Slovenia | 13 | 32 | 55 | 63 | 50 | 27 |
| (non weighted) Mean EU21 | 30 | 43 | 27 | 51 | 76 | 11 |

²³ For this question, more than one answer could be chosen. So the combined percentages of the two add up to more than 100 percent.

Motive for using certain arrangements in establishment that use the following arrangements (employee weighted) (management survey)

| | Phased retirement | | | Early retirement | | |
|----------------|-------------------|--------------|-------------|-------------------|--------------|-------------|
| | For establishment | For employee | Neither/nor | For establishment | For employee | Neither/nor |
| Belgium | 12 | 20 | 68 | 22 | 24 | 54 |
| Denmark | 17 | 1 | 82 | 6 | 6 | 88 |
| Germany | 24 | 5 | 71 | 30 | 5 | 65 |
| Greece | 25 | 2 | 73 | 16 | 3 | 81 |
| Spain | 26 | 4 | 70 | 25 | 5 | 70 |
| France | 12 | 5 | 83 | 17 | 8 | 75 |
| Ireland | 20 | 2 | 78 | 8 | 4 | 88 |
| Italy | 7 | 29 | 64 | 26 | 14 | 60 |
| Luxembourg | 10 | 15 | 75 | 37 | 12 | 51 |
| Netherlands | 26 | 5 | 69 | 39 | 2 | 59 |
| Austria | 12 | 7 | 81 | 9 | 9 | 82 |
| Portugal | 18 | 0 | 82 | 15 | 1 | 84 |
| Finland | 23 | 9 | 68 | 20 | 12 | 68 |
| Sweden | 18 | 1 | 81 | 16 | 1 | 83 |
| United Kingdom | 16 | 3 | 81 | 9 | 8 | 83 |
| Czech Republic | 2 | 1 | 97 | 5 | 9 | 86 |
| Cyprus | 13 | 2 | 85 | 15 | 8 | 77 |
| Latvia | 9 | 3 | 88 | 7 | 14 | 79 |
| Hungary | 47 | 1 | 52 | 62 | 3 | 35 |
| Poland | 3 | 14 | 83 | 19 | 6 | 75 |
| Slovenia | 11 | 8 | 81 | 27 | 3 | 70 |
| (non weighted) | 17 | 6 | 77 | 20 | 8 | 72 |
| Mean EU21 | 17 | 6 | 77 | 20 | 8 | 72 |

Annex 3] Rotated Component Matrix of four factor analysis of working time arrangements of 21 EU countries in the establishment level

| | Component | | | |
|-------------------------------------|-------------|-------------|-------------|--------------|
| | 1 | 2 | 3 | 4 |
| Part-time workers | .027 | .386 | .486 | -.007 |
| Unusual hours | .036 | .301 | .107 | .731 |
| Flexible working time arrangements | .073 | .223 | .388 | -.534 |
| Overtime | -.002 | .439 | .159 | .258 |
| Parental leave | .088 | .490 | .220 | .034 |
| Leave for care or illness in family | .797 | .058 | .126 | .011 |
| Leave for education | .814 | .082 | .122 | .005 |
| Leave for other purposes | .653 | .043 | .076 | -.039 |
| Fix-term contracts | .137 | .535 | -.011 | .087 |
| Temporary agency workers | -.056 | .571 | .042 | -.016 |
| Free lance workers | .115 | .554 | -.252 | -.345 |
| Early retirement | .144 | -.015 | .590 | .088 |
| Phased retirement | .138 | .044 | .739 | -.076 |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 5 iterations.

46% of the variance explained

Annex 4] Cluster analysis

There are several cluster methods that one can use to cluster countries. Here to find the how many clusters there are within the countries under investigation, this paper use the *agglomerative hierarchical clustering* analysis method. Of the various methods this paper uses *Ward's method* which uses an analysis of variance approach to evaluate the distances between clusters, with the *squared Euclidean distance measure*. The results are as follows.

Categorization between flexibility for employee flexibility for employer

* * * * * H I E R A R C H I C A L C L U S T E R A N A L Y S I S * * * * *

Dendrogram using Ward Method

