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Emanuela Ghignoni e Gabriella Pappadà

Flexicurity analysis of youngsters in Europe: the role of "capabilities" and human capital

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Flexicurity analysis of youngsters in Europe: the role of "capabilities" and human capital[*]

Emanuela Ghignoni[a], Gabriella Pappadà[b]

Abstract

The paper presents some significant results of the YOUTH project (Young in Occupations and Unemployment: THinking of their better integration in the labour market), promoted by the European Commission – DG Employment.
The paper assumes that flexicurity is very important for young workers, because they are (as new entrants in the labour market and as workers with peculiar qualitative structural characteristics) particularly exposed to risks of unemployment, "atypical" employment and precariousness trap.
In this framework, we perform a principal component and a cluster analyses to classify the EU Member States in accordance with the degree of achievement of flexicurity for young people. The analysis use a set of indicators wider than that identified in the four flexicurity pillars proposed by the EC and includes flexibility and security components more targeted to young people needs. In particular, we use further human capital indicators and some measures of combination security and young people autonomy, that we propose as indicators of individuals' "real opportunities", strictly tied to the concept of "capabilities".

Keywords: youth employment, labour economic policies, flexicurity, capabilities, human capital.
JEL classification: J08, J21, J24.

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[a]. Sapienza – University of Rome, Department of Public Economics.
[b]. La Tuscia University, Viterbo.

1. Introduction

The knowledge economy/society requires more labour flexibility, on the demand side to face competitiveness and organizational and technological changes, and on the supply side to improve working conditions and to better reconcile family and working lives. In the 1990s, many experts realized that the labour flexibility requested by employers, employees and also by new institutional systems was creating categories of disadvantaged people and in the worse case, social exclusion (see Lindley, 2003). The debate thus focused on the trade-off between dynamic efficiency (necessary to meet changes) and social cohesion.

In this paper we argue that the active participation in labour markets and in society for everyone should be tackle in terms of a "lifecycle approach", because, following Federighi, 2008, we assert that people need specific and different policies in any phase of his/her (working) life.

In this framework, we state that flexicurity is a priority especially for young workers[1]. Indeed, they represent a weak group in the labour market (outsiders) that faces the current "job insecurity" climate, characterised by frequent job changes. Job insecurity is the result of high employment turnover (both in terms of type of job and employer) due to the introduction of newer technologies, newer types of jobs, changes in work organisation and outsourcing. In this context, all workers are in increasing need of transferable skills and more advanced basic skills to cope with transformations in production and organisation, even if current trend data shows a much larger participation of young people in flexible labour contracts. We may thus assume that flexicurity can not be set aside expecially for young workers, because they are (as new entrants in the labour market and as workers with peculiar qualitative structural characteristics) particularly exposed to risks of "atypical" employment and precariousness trap, if not of unemployment.

On the one hand, indeed, flexibility can foster the labour market integration of young people[2] but, on the other hand, without proper security issues it risks creating a segment of young people trapped in unsatisfactory jobs and in a dual labour market system: one with high security but no

[1]. In this paper, as far as possible, two age groups – 15-24 and 25-29 year olds – are analysed. This extension of the analysis to the over-24s is supported by the EC document on youth employment in the EU, showing that in some countries the segmentation of young people continues in the 25 and over age group (see EC 2006, 2007).

[2] . See, among others, Ghignoni, 2007.

flexibility (permanent contracts) and the other with low security but high flexibility (atypical contracts).

On the other hand, the process of integration in the labour market, if not accompanied by job opportunities, even temporary but significant, and if not relatively rapid, risks increasing the job precariousness to which young people, as a vulnerable group, are subject. The flexible job placement pathway is acceptable if it is a dynamic stepping stone to obtain good working conditions in a not too distant future. Bi contrast, a slow placement process, alternating periods of precarious occupation with periods of unemployment, risks becoming a trap for the weakest groups. This risk can be overcome by implementing flexicurity strategies in the various countries that help young people to transform their tangible and intangible resources into functionings, according to Sen's capabilities approach[3].

In this theoretical framework, the purpose of this paper is to analyse the differences and similarities among the various countries with regards to flexicurity for young people, defining possible groups of homogeneous countries. Our analysis wish to widen the traditional set of indicators identified in the four flexicurity pillars proposed by the EC, by adding flexibility and security components more targeted to young people needs. In particular, we use qualititative and quantititative human capital indicators and some measures of combination security and young people autonomy. In our aims these indicators represent a proxy for individuals' "real options", a concept strictly tied to that of "capabilities"[4].

The statistical technique used is a *principle component analysis* completed with a *cluster analysis*.

2. The indicators selection

As suggested by Chapter Two of Employment in Europe (EC, 2006), and by a recent EC communication (COM(2007) 359 "Towards Common Principles of Flexicurity: more and better jobs through flexibility and security"), flexicurity means a combination of labour flexibility and security. The term *flexicurity*, used at first to identify the Danish model, has become the symbol of a welfare production mix which enables more labour flexibility together with more labour security.

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[3]. See Livraghi, 2008.

[4]. See Kogout and Kulatilaka, 2001.

A number of authors use flexicurity as a policy concept for ranking countries. Wilthagen and Van Velzen (2004) place different welfare regimes along the flexibility-security axes, while Tangian (2004) develops a 'flexicurity index'. Some authors trace the role of flexicurity for only a part of the labour force. Thus, Tros (2004) looks specifically at older workers.

Wilthagen and Van Velzen (2004) use measures based on three criteria: (i) the number of transitions between non-employment and employment and within employment by type of contract during one year; (ii) diversity of contractual and working arrangements which include a measure for employees in part-time and fixed term contracts and self-employed as a share of total employment and (iii) transitions by type of contract. More recently, another attempt at quantifying flexicurity was made by Madsen (2006), who identified the following measures: (i) legal strictness of employment protection from the OECD Employment Outlook; (ii) average tenure by sex, age, sector and education; (iii) net replacement rates from OECD Benefits and Wages; (iv) Active Labour Market Policies from OECD Employment Outlook; and (v) public expenditure in labour market policies from OECD Employment Outlook.

Starting from these studies, we tried to define a scenario of young people's labour market integration in terms of flexicurity, presenting an overview of different parameters.

In order to cluster the EU Member States[5], we have selected some general indicators to build the framework of the country and specific indicators related to young people (for a deeper description of the variables see Table 6). These indicators represent the two assets of flexibility and security, as explained below.

In particular, on the flexibility side, we have considered four typologies of flexibility (Wilthagen and Tros, 2004; EC, 2006):

- **External flexibility**, meaning the aptitude of firms to hire and fire workers and to use temporary contracts. In this case our aim is to identify the most used labour contracts for young people. This area will involve an analysis of the level of difficulties to hire and fire workers with different kinds of contracts (permanent ones and atypical ones) in different countries and an analysis of the share of young people involved in these contracts.

[5]. Due to a lack of data, Malta, Romania, Bulgaria, Cyprus and Luxembourg are not included in the estimation.

- **Working time flexibility** (or **internal flexibility**), meaning the possibility to obtain quantitative adjustment of workforce through working time changes (overtime, part time, work shift, timesheet flexibility, etc…). In particular, we focus on an analysis of part time young workers. Our Hypothesis is that it would be especially interesting for young women and for those students that combine education and work. For this reason, we will also consider involuntary part time.
- **Functional flexibility**, meaning the difficulty or ease to change organization schemes within the firm, appealing to workers ability to adapt new changes. It could be measured through the percentage of workers employed in advanced form of organisational models (see Croce, 2008)[6].
- **Wage flexibility**, meaning the link between monetary conditions, kinds of contracts and individual and territorial characteristics. In our case wage differentials among age groups (young people versus adults) assume a particular importance.

On the security side, we have started from Rodgers and Rodgers (1989) and Standing's approach (1999) on the basis of the following mix of security indicators:

- **Job security/stability**, traditionally measured by Employment Protection Legislation index. It concerns, in particular, the share of permanent employees combined with the level of protection against the job loss in each country, with particular reference to young workers.
- **Labour market security/employment security**, meaning the probability of finding a new job in a dynamic labour market which offers good opportunities of being reemployed. Our aim is to investigate if the market can guarantee good opportunities to young workers. It involves two sub-areas of analysis: a) the first one concerns indicators connected with employment and unemployment; 2) the second one will analyse Active Labour Market Policies.
- **Protection security**: in the sense of social protection connected to social security and unemployment benefits expenditure. The aim is to investigate the benefits that could have a positive impact on young people's well being. It concerns the national system of social protection (NSSP – Welfare regime), with particular reference to Passive Labour Market Policies.

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[6]. Employment in Europe 2007 (p. 148, table 8) give information on the share of employment in advanced form of organisational models. Unfortunately it includes data referring to a too little sub-sample of countries and we prefer not to insert this variable in the formal statistical analysis.

- **Income security**[7]: in the sense of the *degree of economic autonomy* of young people. This area will compare young people's earning variables and the risk of poverty. If the level of income is unsatisfactory, the separation of young people from the family of origin and the creation of a new family is postponed. This represents one of the most important problem of young people in Europe, worsened, in some countries, by the segmentation of young people in jobs with unsatisfactory working conditions and with access to credit difficulties.
- **Learning security**: it is a stylised fact that more educated and more skilled people have better opportunities to obtain a good job. For this reason this area will explore education and training variables, in terms of rates of participation of young people and the share of expenditure in education and training.
- **Combination security**: opportunity to balance work and family through flexible contractual arrangements that satisfy the needs coming from the labour supply side and through family benefits and child care services.

The flow chart reported in Graph. 1, allows to understand how the model involves and frames the flexicurity assets in the four flexicurity components identified by the European Commission and in the two last components (labour market outcomes and additional "capabilities" indicators), added by the authors in accordance with the theoretical framework of the YOUTH project:

1. flexible and reliable contractual arrangements;
2. comprehensive lifelong learning strategies;
3. effective labour market policies;
4. modern social security systems;
5. *labour market outcomes;*
6. *"additional" indicators.*

The flexible and reliable contractual arrangements component includes all flexible assets, which characterise the kind of labour contract specificity. The different kind of labour contracts (temporary or permanent) allows to understand if they involve job stability, whereas monetary and

[7]. Generally speaking, the term "Income Security" defines Passive Labour Market Policies aiming to provide income to unemployed people (unemployment benefits). In this paper we deal with young people and we are not only worried about their probability of being unemployed, but also about their probability of being employed with a low wage not allowing their "autonomy". For this reason, we call "Income Security" the possibility of young people of being autonomous from an economic point of view.

non monetary working conditions specified in the contract reflect income security assets.

The comprehensive lifelong learning strategies component includes, obviously, learning security, expressed in the model with indicators of lifelong learning policies and young people participation in education and training.

The effective labour market policies component includes labour market security, identified by Active Labour Market Policies expenditure, which help labour market participation.

The modern social security systems component involves an element of protection security and indicators connected to unemployment benefits in order to capture income security of unemployed people.

We include labour market outcomes in order to identify through indicators, which reflect the labour market participation of young people and problems connected to transition periods, elements of labour market security, job stability and working time flexibility.

A special focus has been devoted to some additional components, which includes variables that are not strictly related to traditional labour market indicators and that have been inspired by the "capabilities" approach[8].

These latter indicators are connected, in particular, with learning, economic independence and combination security for young people:

- OECD-PISA average score;
- percentage of 20-29 year olds who have at least a secondary-school qualification;
- percentage of young people at risk of poverty;
- employment impact of parenthood;
- % of under 2 beneficiaries of child care services.

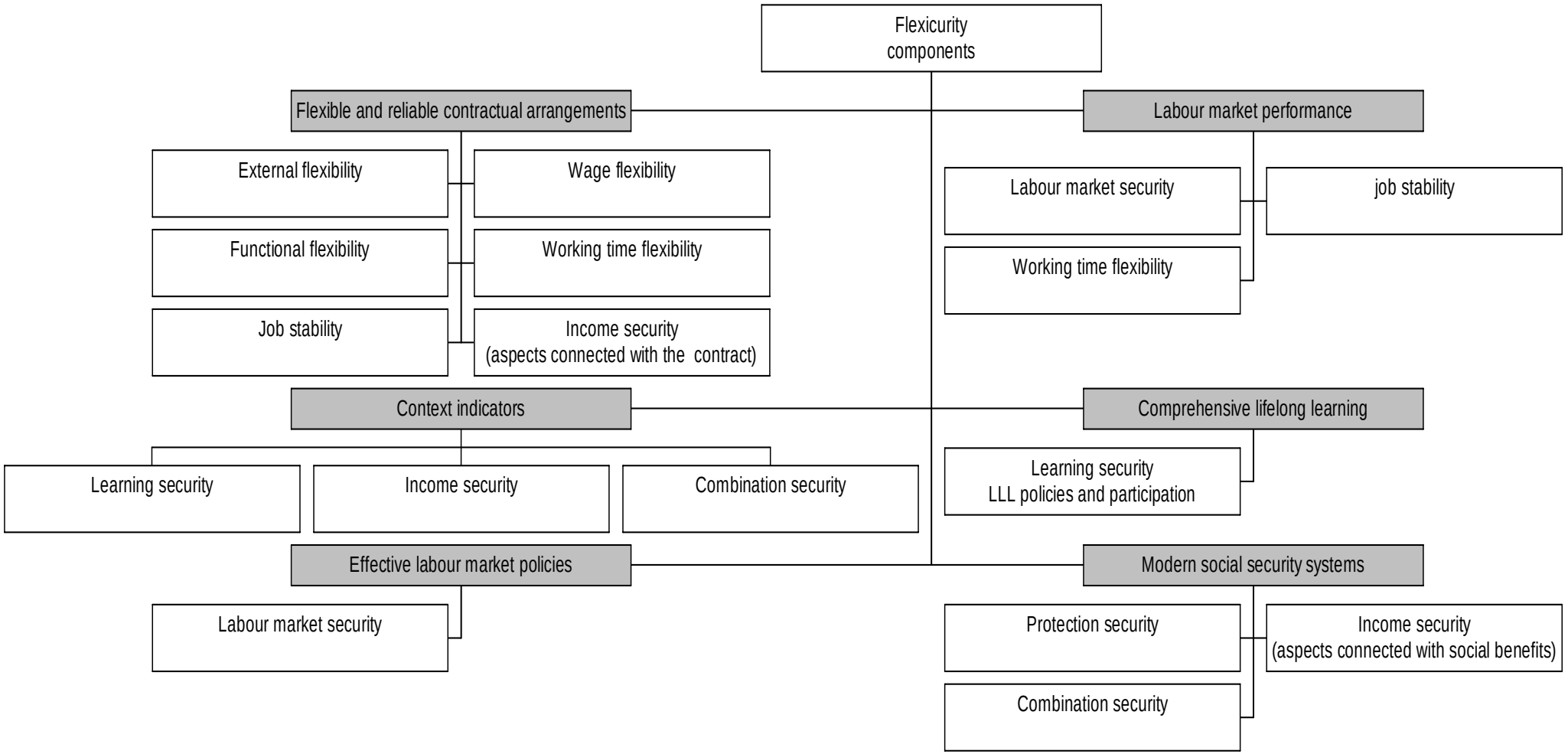
In particular, the innovative indicators focus on quality and quantity of human capital (measured by OECD-PISA and the percentage of young people with an upper secondary degree), on the probability of escaping the poverty trap (percentage of young people at risk of poverty) and on the possibility of young people (in particular of young women) of balancing work and family life.

We also use the Human Development Index, as a context indicator of well-being[9].

[8]. See Kogout and Kulatilaka, 2001. op. cit.

[9]. See Livraghi, 2008, op. cit.

Flow chart 1 - Flexicurity components chart
establishing a Flexicurity indicators framework



4. The statistical results

Before proceeding with the implementation of the *cluster analysis*, a normalised *principal component analysis* was performed. This exploratory type of factorial technique highlights significant relations between the elements of a data matrix by reducing dimensionality and building synthetic and unobservable dimensions (factorial axes) to interpret the phenomenon analysed. These factorial axes reconstruct "points of view" from which it is possible to carry out the analysis.

Variables utilised in the empirical analysis are reported in table 6. According to what we said in preceding paragraph we include in our analysis the four flexicurity components identified by the European Commission and two further components in accordance with the theoretical framework of the YOUTH project.

For the purposes of the empirical analysis we group these six "pillars" of flexicurity into three main macro-areas (see table 6):

1. *Flexibility*, including 13 indicators of "flexible contractual arrangements";
2. *Security*, including the traditional indicators of "comprehensive lifelong learning strategies", "effective labour market policies", "modern security systems" and the more innovative "context and capabilities indicators". This macro-area includes, on the whole, 14 indicators.
3. *Labour markets outcomes*, including 13 indicators.

In this manner we input, more or less, the same weight to the different sets of indicators, with a special emphasis on some security indicators that can not be renounced by young people, such as combination security and others[10].

[10] . The analysis of the correlation matrix put into evidence, on the one hand, a strong correlation between share of employment with fixed term (part time) contracts among young people and share of employment with fixed term (part time) contracts among students and, on the other hand, between employment and long-unemployment rates for young people. This contributes to enhance the weight we input to the aspects of *flexibility* and *labour market outcomes*, and tends to re-balance the "overweight" of the *security* aspect. No strong correlations between indicators belonging to different macro-areas are found.

4.1 Principal Component Analysis

The original data matrix has a 22 by 40 dimension, i.e. 22 countries analysed (excluding Bulgaria, Romania, Malta, Cyprus and Luxembourg because of their particularity and scarcity of data) and 40 variables (see the list of indicators reported in Table 6).

First of all, we can analyse the principal factorial plane (Graph. 1) which, as seen in the eigenvalues panel (see Table 1), explains more than 50% of the total linear variability[11].

In the description of the factorial axes we have taken into account variables with a correlation coefficient of over 0.35, attempting to show up those with the highest absolute contribution[12].

The first factorial axis (Table 2) shows, on its positive side, a high correlation with variables representing a strong State intervention in labour markets (such as expenditure in Active and Passive Labour Market Policies), with variables indicating a good young labour market situation (high 15-24 rates of employment, high availability of part-time work for the young in general and for students), and with variables indicating combination security (*childcare*). There is also a good correlation with a high index of well-being (measured by the Human Development Index) and with labour productivity. It is evident that these variables define a Nordic type of socio-economic security, featuring an active social-protection system with strong Active Labour Market Policies and extensive part-time work as a flexibility system able to integrate in the labour markets the most disadvantaged individuals (young people and women). The countries most to the right in Graph. 2 are, in fact, the Netherlands, Denmark, Sweden and Finland.

The negative semiaxis, which is obviously negatively correlated with the variables of the positive side, shows a high correlation with long-term youth unemployment, with the NEET percentage among 15-29 years old individuals, with the percentage of self employed young workers, with the percentage of involuntary young part-timers and temporary workers, with a strong inequality of labour incomes, with the poverty trap risk And with a strong employment impact of parenthood. The positive correlation with these variables clearly represents a low level of social inclusion and security for the young, typical of East-European countries (Slovakia, Hungary, Estonia, Latvia, Lithuania, Czech Republic, Poland) but also of

[11]. The first two eigenvalues explain 50.7% of the original inertia.
[12]. The analyses were carried out with the SPAD 5.0 statistical package.

Mediterranean countries (Greece, Italy, Portugal and, with less evidence, Spain).

Table 1 – Eigenvalues panel

Number	Eigenvalue	Percentage	Cumulated percentage
1.00	**13.74**	**34.35**	**34.35**
2.00	**6.54**	**16.35**	**50.70**
3.00	3.41	8.53	59.24
4.00	3.18	7.96	67.20
5.00	2.13	5.34	72.53
6.00	1.85	4.62	77.16
7.00	1.62	4.04	81.20
8.00	1.30	3.25	84.45
9.00	1.07	2.67	87.12
10.00	0.97	2.42	89.54
11.00	0.80	1.99	91.53
12.00	0.66	1.64	93.17
13.00	0.57	1.41	94.58
14.00	0.48	1.20	95.78
15.00	0.41	1.03	96.81
16.00	0.37	0.93	97.74
17.00	0.33	0.83	98.57
18.00	0.23	0.56	99.14
19.00	0.17	0.43	99.57
20.00	0.11	0.28	99.85
21.00	0.06	0.15	100.00
22.00	0.00	0.00	100.00
23.00	0.00	0.00	100.00
24.00	0.00	0.00	100.00
25.00	0.00	0.00	100.00
26.00	0.00	0.00	100.00
27.00	0.00	0.00	100.00
28.00	0.00	0.00	100.00
29.00	0.00	0.00	100.00
30.00	0.00	0.00	100.00
31.00	0.00	0.00	100.00
32.00	0.00	0.00	100.00
33.00	0.00	0.00	100.00
34.00	0.00	0.00	100.00
35.00	0.00	0.00	100.00
36.00	0.00	0.00	100.00
37.00	0.00	0.00	100.00
38.00	0.00	0.00	100.00
39.00	0.00	0.00	100.00
40.00	0.00	0.00	100.00

The second factorial axis (Table 3) shows on the negative semi-axis a strong correlation with the percentage of fixed-term contracts for the young and for students, with a high turnover for young workers, with a strong youth-to-adult differential in the rate of labour turnover, with youth unemployment rates, with the percentage of involuntary young part-timers, with the percentage of discouraged young workers and with EPL. These variables represent strongly segmented economic systems, focused on a swift entry of young people into the labour market through an extensive use of fixed-term contracts and a higher turnover than the adults: the so-called "flexibility at the margin" (Spain).

Against this, the positive semi-axis shows a high correlation with the growth of productivity, with the percentage of 20-29 year-olds possessing an upper secondary education qualification, with high PISA scores, with the percentage of 30 year olds and lower who perceived educational allowances, with the percentage of under 30 receiving social benefit and with the expenditure in Public Employment Services. These variables characterise countries with a high level of aggregated human capital (and a consequent labour productivity trend) largely financed by the State and include a group of *flexible* economic systems (referring to the entire labour force and not only to young workers[13], as United Kingdom and Ireland) with a low degree of *segmentation*[14].

In conclusion, it seems that the more rigid countries with less security are represented on the left of the horizontal axis, with the more flexible and secure ones going towards the right. Then the countries with more flexicurity (for the youngsters) would be those on the right of Graph. 2.

In particular, these countries have developed, on the one hand, internal flexibility (part time) and, on the other hand, labour market security (*ActiveLMP*), protection security (*PassiveLMP*), combination security (*childcare*) and a high degree of "well being"(*HDI*). By contrast, the countries on the left side of Graph 2 introduced flexibility through a high percentage of involuntary[15] temporary and part time contracts, a high quota of self employment and a strong wage flexibility (*D90-D10*). On the other hand, these countries do not provide security features and present worrying symptoms of low capabilities (poverty trap), social exclusion (*NEET*, long-

[13]. Note that the positive semi-axis shows a negative correlation with EPL.

[14]. By segmentation, we mean a substantial difference between the percentage of young people with flexible labour contracts and the rest of the working population.

[15]. The more individuals perceive "insecurity", the less they would be prepared to accept atypical contracts.

term youth unemployment), and strong difficulty to balance family and working life, that is, a lack of combination security (*Parenthood*).

Table 2 – First factorial axis

Variables	Coordinates	Weight	Mean	Standard deviation
long_unemp25-29	-0.79	22.00	38.14	15.68
long_unemp15-24	-0.79	22.00	27.79	15.54
Self_15_24	-0.71	22.00	4.61	2.98
growth_prod	-0.60	22.00	2.85	6.98
Invol_temp_15_24	-0.58	22.00	46.83	21.13
D90_D10	-0.58	22.00	3.33	0.90
NEET15-29	-0.55	22.00	8.64	2.88
PovertyTrap	-0.50	22.00	16.54	5.70
Invol_part_15_24	-0.44	22.00	28.45	12.00
Parenthood	-0.44	22.00	24.28	11.08
MIDDLE AREA				
lab_produc	0.70	22.00	95.11	26.35
partstud15-24	0.71	22.00	46.96	22.30
Childcare 0-2	0.77	22.00	23.45	17.83
PassiveLMP	0.80	22.00	0.91	0.70
partstud25-29	0.81	22.00	29.18	17.57
empl_rate15-24	0.83	22.00	35.75	12.09
ActiveLMP	0.84	22.00	0.47	0.36
HDI	0.84	22.00	0.91	0.04
part15-24	0.86	22.00	22.37	16.63
part25-29	0.89	22.00	17.81	13.44

By contrast, the different types of flexibility chosen by the various countries seem to affect their placement on the vertical axis, with those in the upper areas characterised by a more “widespread” flexibility and those underneath more focused on the so called flexibility “at the margin”.

In particular, the countries below the horizontal axis are characterised by a high external flexibility for young workers (high percentage of young people involved in fixed contracts and a high youth-to-adult labour turnover ratio), jointly with a high job security for (adult) workers (*EPL*). On the contrary, the countries above the horizontal axis are characterised by less differences in external flexibility between young and adult workers and by a higher job/employment security for young workers (high youth

employment rates) obtained through a strong Public Employment Service and a good level and quality of human capital for young people.

Table 3 – Second factorial axis

Variables	Coordinates	Weight	Mean	Standard deviation
FIX stud25-29	-0.82	22.00	34.58	18.85
Invol_part_15_24	-0.79	22.00	28.45	12.00
FIX stud15-24	-0.74	22.00	52.64	23.64
EPL	-0.70	22.00	2.32	0.55
fixed25-29	-0.62	22.00	23.34	13.31
unemp_rates25-29	-0.61	22.00	9.67	4.10
turnover_gio_ad	-0.54	22.00	1.10	0.33
unemp_rates15-24	-0.50	22.00	18.76	7.52
turnover15_29	-0.46	22.00	20.69	8.54
Discouraged 15-24	-0.36	22.00	2.40	2.76
MIDDLE AREA				
PISA	0.36	22.00	498.55	18.14
%ed_all	0.39	22.00	0.40	0.39
PES	0.40	22.00	0.16	0.13
empl_rates25-29	0.43	22.00	75.54	5.30
%upsec20-29	0.47	22.00	81.84	9.85
growth_prod	0.51	22.00	2.85	6.98
%30soc_ben	0.58	22.00	57.53	15.38

Consequently, our analysis suggests that the most advanced countries on the flexicurity pathway are those on the right side of Graph 2, while the positions along the horizontal axis are determined mostly by the type of flexibility chosen by various countries. Indeed, most of the countries laying on the right side of graph. 2 make an extensive use of external and internal flexibility (regarding all-aged workers, as in the UK and in Ireland, or referring most to young workers, as in the countries laying below the horizontal axis) but, at the same time, they provide all workers (young and adult) with a widespread system of labour market security, protection security, income security and combination security. On the other side, countries laying on the left side of graph. 2 did not implemented a large degree of flexibility (as in Eastern Europe countries) or concentrated it mostly on young people (as in Mediterranean countries)

and, at the same time do not provide (adult and) young workers with acceptable security assets, in particular labour market, income and combination security.

In this case, the absence of segmentation would not be a *necessary condition* for implementing flexicurity, as commonly asserted in economic literature[16].

This widely-held conviction is based on Wilthagen and Tros's[17] definition of flexicurity as a "policy strategy that attempts, synchronically and in a deliberate way, to enhance the flexibility of labour markets, work organisation and labour relations on the one hand, and to enhance security – employment security and social security – *notably* for weaker groups in and outside the labour market, on the other hand".

Some authors[18], on the basis of this definition, state that those policies which extend flexibility among the total labour force and accentuate protection mechanisms only in favour of stronger groups of workers or insiders, would not be flexicurity policies. At the same time, those policies which extend flexibility at the margin of the labour force, that is provide flexible contractual forms mainly addressed to individuals with greater employability difficulties (such as the young labour force), would not be flexicurity policies since they would inevitably create a segmentation on the labour market.

Against this, our research shows that, although it does not seem correct to extend protection mechanisms *exclusively* to the strong segment of the labour force, flexibility at the margin is not necessarily in conflict with a flexicurity model.

In particular, flexibility at the margin and flexicurity would not be in conflict if, coherently with Wilthagen and Tros definition of flexicurity, the greater flexibility of the youth labour market, compared with the adult one, would be accompanied by higher social and employment security for the young, enclosed therein combination security.

It is worth noticing, besides, that it is not only the extensive use of temporary labour contracts for young people and students (external flexibility) that helps to "shift" countries to the right side of Graph. 2, that is towards a higher level of flexibility and security, but also and above all a widespread use of part-time work (internal flexibility).

Moreover, Employment Protection Legislation (*EPL*) has no effect whatsoever on the first factor, that is, it does not affect the placement of

[16]. Raitano M., Pisano E., 2007.
[17]. Wilthagen T., Tros F., 2004.
[18]. See footnote 12.

countries to the left or right side in Graph. 2. A high EPL value does not therefore seem decisive in terms of flexicurity.

Indeed, comparing Graphs 4 and 2, we find an EPL value lower than the European average for both the countries on the left side of Graph. 2, with more problems in pursuing a flexicurity strategy (Hungary, Czech Republic, Slovakia, Poland and Italy) and for those on the right side (United Kingdom, Ireland, Denmark, Finland, Austria and the Netherlands). In particular, a very long distance is noted between the positions of the Netherlands and Italy in Graph. 2, in spite of an extremely modest difference in the EPL of the two countries (2.4 for Italy, equal exactly to the European average, and 2.3 for the Netherlands, see Graph. 4).

On the other side, among the countries with a higher EPL than the European average, we find both those with the greatest problems in terms of flexicurity (Latvia, Estonia, Lithuania, Greece and Portugal) and the most "virtuous" countries (Sweden, Belgium, Germany, Luxembourg and France).

4.2 Hierarchical Cluster Analysis

After the ACP we performed a Hierarchical Cluster Analysis, based on the first 9 factors of the preceding analysis, explaining, in this manner, 87.12% of the initial inertia. We only chose the factors with eigenvalues greater than 1, in order to reduce the introduction of "noise" in the analysis and to privilege strong relations.

The aim of the analysis is to obtain the minimum number of clusters characterised by the maximum internal homogeneity. To realise this partition it is necessary to cut the dendrogram[19] (Graph. 5) at the point in which we observe the maximum "drop" in the internal variance passing from a certain number of clusters to that immediately subsequent.

The "optimal cut" has been executed in order to build up 5 clusters (see the continuous line on the dendrogram). This choice has been confirmed by the observation of the alternative partitions realised by the *software*, corresponding to 3 and 6 clusters. The passage from the partition in 3 clusters (dotted line on the dendrogram) to the partition in 5 clusters

[19]. The dendrogram shows along increasing coordinates the level of agglomeration of the different elements (countries), that in the agglomeration process made up some nucleus. This graphic describes the whole process of agglomeration and provides a partitions' hierarchy.

produce a good increase in the between/within inertia ratio[20] (from 0.5622 to 0.7560, that is +34.5%) and cut the Netherlands and Denmark off the group of the best-behaving countries, highlighting their leader position in the field of flexicurity. By contrast, the passage from the partition in 5 clusters to the partition in 6 clusters (broken line in graph. 5) would have increased only a little the between/within inertia ratio (from 0.7560 to 0.7890, +4%) and would have involved the creation of an excessive number of clusters, contradicting the aim of the analysis.

Table 4 shows the elements/countries belonging to each cluster. Table 5 reports the variables that characterise the different clusters with t-value greater than 2[21]. The test-value should not be interpreted in probabilistic terms, as we can not hypothesis the independence between the clusters of a partition and every variable that generated such a partition[22]. It should rather interpreted in terms of significance of a variable in determining a given cluster. In this case we can utilise this value in order to construct a classification of the different variables in a given cluster.

Table 4 – Clusters composition

Cluster 1 (7 countries)	Cluster 2 (2 countries)	Cluster 3 (2 countries)	Cluster 4 (4 countries)	Cluster 5 (7 countries)
Belgium	Ireland	Denmark	Spain	Poland
Slovenia	United Kingdom	The Netherlands	Portugal	Estonia
Austria			Greece	Latvia
Germany			Italy	Lithuania
France				Czech Republic
Sweden				Slovakia
Finland				Hungary

[20]. In order to evaluate the quality of the dendrogram's cut we analysed the between/within inertia ratio, that is the ratio between the variability among the different groups and the variability inside the groups. The greater this index (which tends to 1), the best is the partition quality, in that we have the maximum diversity among the groups and the maximum internal homogeneity (the minimum internal variability). Obviously, if we would consider each element/country as a cluster, this ratio would reach his maximum value, but the additional information for the analysis would be equal to zero.

[21] In this way we put in evidence only the characteristic variables of the various clusters.

[22]. See Bolasco, 1999.

The first cluster (Belgium, Slovenia, Austria, Germany, France, Sweden and Finland) has already been identified on the first factorial axis resulting from the ACP. Indeed all these countries are on the right side of Graph. 2, even if they represent a composite group of countries. This cluster is characterised, on the one hand, by:

1. a high level of labour productivity and Human Development Index;
2. a wide utilisation of fixed term contracts for students and a high youth-to-adult turnover ratio;
3. a high level of active and passive labour market policies;
4. a low long-term youth unemployment rate and a low percentage of self employed.

These countries seems to be characterised by a certain degree of segmentation in the labour markets, compensated by a strong utilization of active and passive labour markets policies, leading to a substantial integration of young people in the labour markets that allow them to escape from the trap of long-term unemployment[23].

The second cluster (UK and Ireland) is characterised by:

1. a very low level of EPL;
2. a high percentage of under 30's receiving social benefit.

This is the case of countries in which even if flexibility is extended to the majority of active population, young people are not neglected by social security system.

The third cluster (Denmark and the Netherlands) represents the advanced northern flexicurity model. The common characteristics of these two countries are:

1. a large utilisation of part time contracts for young workers and students, that is internal flexibility, a little quota which seems to be "involuntary";
2. a large quota of young children (aged 0-2) cared for by formal arrangement other than the family (*childcare*), in order to allow a large participation in the labour market of young females (combination security);
3. high expenditure in Active Labour Market Policies and a high percentage of under 30s receiving unemployment benefit

[23]. In this group, it is worth noticing the interesting position of Slovenia, that is the only New Member State included in a cluster made up of only EU15 countries.

4. low risk of poverty trap;
5. high employment rates for young people.

This group of countries bet on internal flexibility and on a variety of security assets that ensure to young people good probability of employment and economic autonomy.

The fourth cluster, represented by the four Mediterranean countries (Spain, Portugal, Greece and Italy), is characterised by:

1. a low level of aggregate human capital for young (and adult), measured through the percentage of 20-29 years old possessing at least an upper secondary degree;
2. low expenditure in Passive Labour Market Policies for young and adult, measured through a low Net Replacement Rate of unemployment benefits;
3. a high percentage of self-employed and involuntary young part-timers
4. a high, on average, level of EPL and a high percentage of young people in fixed term contracts.

This group of countries pointed on "flexibility at the margin", neglecting protection security for young and adult workers and without providing young people of an adequate level of human capital to face the increasing need of (transferable) skills in the knowledge society.

The fifth cluster includes seven ex-socialist countries (Czech Republic, Latvia, Lithuania, Estonia, Hungary, Slovakia and Poland) and is characterised by:

1. low external and internal flexibility for young people;
2. high inequality in the distribution of labour income (wage flexibility);
3. low combination security (*childcare*) and a consequent strong employment impact of parenthood;
4. low expenses in Active and Passive Labour Market Policies;
5. low Human Development Index;
6. a low level of labour productivity, growing and converging towards the EU15[24];
7. low youth employment rates and high long-term youth unemployment.

[24]. Indeed our data would highlight a convergence process between productivity indexes in European countries.

Table 5 – Clusters characteristics

Characteristic variables	Cluster mean	Overall mean	Test-value	Prob.
Cluster 1 / 5 - Count: 7				
FIX stud15-24	74.57	52.64	2.90	0.0018
lab_produc	112.78	95.10	2.75	0.0000
HDI	0.935	0.90	2.74	0.0000
turnover_youth_ad	1.34	1.10	2.69	0.0000
ActiveLMP	0.67	0.50	2.40	0.0100
PassiveLMP	1.44	1.00	2.33	0.0099
Self_15_24	2.07	4.49	-2.49	0.0064
Cluster 2 / 2 - Count: 2				
%30soc_ben	74.01	57.50	2.65	0.00
EPL	1.20	2.32	-2.95	0.0016
Cluster 3 / 5 - Count: 2				
part15-24	62.15	22.37	3.47	0.0003
part15-29	27.40	11.54	3.11	0.0009
empl_rate15-24	59.70	35.75	2.87	0.0021
ActiveLMP	1.15	0.47	2.70	0.0035
Childcare	56.50	23.45	2.69	0.0036
%un_benefit	1.00	0.70	2.40	0.0081
Povertytrap	0.07	0.18	-2.71	0.0030
Invol_part_15_24	8.00	31.62	-2.87	0.0002
Cluster 4 / 5 - Count: 4				
fixed15-29	38.60	17.37	2.65	0.0041
EPL	3.30	2.32	2.59	0.0048
Self_15_24	11.15	4.49	3.12	0.0009
Invol_part_15_24	50.85	29.55	2.33	0.0099
%upsec20-29	56.50	81.84	-3.73	0.0001
NRR	19.50	60.89	-3.17	0.0008
Cluster 5 / 5 - Count: 7				
growth_prod	9.84	2.85	3.14	0.0008
long_unemp25-29	53.13	38.14	2.99	0.0014
Parenthood	34.57	24.53	2.82	0.0024
D90_D10	4.05	3.29	2.63	0.0042
FIX stud15-24	34.40	52.64	-2.42	0.0079
part15-24	9.26	22.37	-2.47	0.0068
empl_rate15-24	25.34	35.75	-2.69	0.0035
ActiveLMP	0.16	0.47	-2.72	0.0033
Childcare	7.86	23.45	-2.74	0.0031
part15-29	5.04	11.54	-2.75	0.0030
FIX stud25-29	16.87	34.58	-2.94	0.0016
partstud15-24	25.94	46.96	-2.95	0.0016
Passive LMP	0.22	0.95	-2.96	0.0015
partstud25-29	11.79	29.18	-3.10	0.0010
lab_produc	62.56	95.11	-3.87	0.0001
HDI	0.85	0.91	-4.30	0.0000

This group of countries is far from the implementation of an adequate level of flexibility to meet technological and organizational changes and, at the same time, show a warring indication of social exclusion of young people (measuring though long-tem unemployment) and a strong shortage in combination security.

5. Final remarks

In this paper, assuming that the European Union was realized to achieve the well being (in the sense suggested by Sen and his school) of all workers living in the integrated European Union, we state that flexicurity for all potential workers is a very important step toward this goal. The European documents in the XXIst century, starting from the Lisbon Council in 2001, support this assumption.

In particular, we state that flexicurity is a very important issue especially for young people who are largely involved in temporary contracts and largely exposed to the risk that temporary employment might not be a "temporary" phenomenon but a long lasting one.

Flexicurity tools adapted to the context, to the needs, to the age and to tangible and intangible resources of young citizens would enable them to construct a career pathway in the labour markets that fosters employability and access to quality jobs. To be effective, flexicurity has to be correlated to employability, where employability is more than about just developing personal attributes, competences or experience to enable an individual to get a job, or to progress within a current career. It is about learning and developing critical, reflective abilities with a view to empowering and enhancing the learner, towards more freedom of choice by workers of all ages.

Our approach focuses its attention on the role of *local* communities, characterized by tangible and intangible resources, and on their capacity to convert such resources into individual and collective well-being. The various European countries differ in their economic structures, production processes and lifestyles, depending on tangible, intangible, and human resources available. Furthermore, the "real opportunities" of the single individuals and their capacity to outline a common objective and share it with a sense of responsibility differs from country to country. In this framework the knowledge of the context is essential to trigger an economic development process that counters the trends of a territory and enhances young people's integration in the labour markets.

In this context we performed a cluster analysis, aiming to identify some homogeneous groups of countries in terms of flexicurity experiences for young workers, taking into account some variables linked to the "real opportunities" of young people, such as quantity and quality of human capital, combination security and economic independence.

The classification of countries that emerges from our analysis, partly confirms the results obtained in previous economic literature with reference to the whole European working population or other segments. Thus, our analysis highlights that European countries differ in their socio-economic structures in terms of flexicurity for young people and brings forth the existence of five different groups of countries[25] (see Graph. 6).

1. ***two countries (Denmark and the Netherlands) seem to have worked out the problem of flexicurity for young and adult workers,*** by staking on internal flexibility, on Active/Passive Labour Market Policies and on combination security, leading to a very low risk of poverty trap for young people.

More precisely:

- Denmark is characterised by flexible labour law and low job protection, accompanied by Lifelong Learning strategies, Active Labour Market Policies and a strong social security system. "…These factors contribute to create one of the most modern labour system in which the individual is put at the centre and where he receives the means to fulfil his needs[26]…".
- The Netherlands are characterised by a strong development of part-time open-ended jobs, which particularly involve women, and by the application in labour legislation of three important rules: 1) fixed-term contracts can only be renewed three times; 2) eliminating barriers to temporary agencies; 3) introduction of these two ingredients in the labour law and in collective agreements, providing minimum protection and pay.

[25]. It is worth noticing that countries belonging to the same group are not perfectly homogeneous. Nevertheless the partition of the dendrogramm and the definition of the various groups has been made on the basis of the analysis of the between/within inertia ratios.

[26] . Badriotti A., 2008.

2. ***Two Anglo-Saxon countries (United Kingdom and Ireland)*** in which the low employment protection legislation index is accompanied by a good rate of youth employment, but with the risk of being trapped in bad jobs. In particular, the UK registers a high share of permanent workers due to the easiness to hire an fire. "…Non-permanent contracts are quite rare in the UK – 93.6% of all employees are on permanent contracts. The most common form of non-permanent contract is for a fixed period or a fixed task, though this only covers 2.4% of all employees. Amongst young workers under the age of 30, atypical contracts are slightly more common, though 87% of employees aged under 30 are still on permanent contracts. As expected, training contracts and apprenticeships are more common for young workers than for all workers, though contracts for a fixed period or a fixed task are still the most common form of non-permanent contract, even amongst young workers[27].."

3. ***A very composite group of Central and Northern European countries seem to be, in different manners, on the way to solve the problem*** of flexicurity for young people. Some of these countries are characterised by a rather strong degree of segmentation in the labour markets (France), others seem to be characterised by a more widespread flexibility (Austria), but all of them have got a high level of well-being (*HDI*) and obtained a strong reduction of youth long term unemployment rates through high labour market flexibility, accompanied by a good level of social benefits for young people, effective Active/Passive Labour Market Policies and strong social partnership.

4. ***Mediterranean countries seem to have introduced a certain degree of (external) flexibility in their labour markets (in part based on self employment), without introducing sufficient social security cushion and neglecting human capital accumulation.*** In this group the situation of Italy, country with a high share of young people at risk of precariousness and extensive debate about reforming social benefits (that are extremely weak or even absent for atypical workers), seems to be more serious than the situation of Spain, that is characterized by a very strict EPL and a high proportion of fixed-term contracts, but where the recent "May

[27]. See Badriotti, 2008, op. cit..

2006" Agreement set that *any worker who has signed two or more fixed-term contracts with the same company for more than 24 months over a 30-month period automatically obtains an open-ended contract*.

5. ***Eastern countries seem to be far behind in terms of (numerical) flexibility and security as well***. Indeed, on the one hand, they are characterised by a low level of external and internal flexibility and by strong young/adults differences in wage levels (that is, high wage flexibility) and a strong segmentation by gender in the labour markets (that is, low combination security). On the other hand they appear to be late as far as Active and Passive Labour Markets Policies expenditure in percentage of GDP is concerned. As a consequence, they present a lower average value of Human Development Index, as a measure of well-being, and a very high level of young long-term unemployment rate, which is an indicator of social exclusion. In any case, in these countries labour productivity is growing and converging to the average European level. In this group, the situation of the Czech Republic stands out from the others, in that it still provides few employability measures for young people and needs interventions to promote the different forms of flexibility (i.e. Czechs citizens would not be available for part-time contracts due to low average wages and high social contributions, which mean low incomes) and to modernize security and learning strategies. Moreover, there is the risk that fast growth and convergence in terms of labour productivity and wages will very soon usher in flexibility initiatives that could produce the same precariousness problems encountered in the Mediterranean Member States.

The peculiarity of our study is the special focus devoted to some variables not strictly related to traditional flexicurity indicators, that could provide some indication on the pathway to achieve a flexicurity model adequate to young people's needs. Indeed, a general suggestion from the literature concerns the difficulty to export the flexicurity Danish model to countries with different socio-institutional backgrounds. J. Zhou (2007) has also claimed that it is difficult to pursue the security objectives in the new, enlarged European Union because of the dilution of the European model of Social Dialogue following the entry of post-socialist countries.

In this context, our analysis shows that, at least, two characteristics are common to the best-behaving countries: a good level of combination

security and a low risk of poverty trap (that is, economic independence) for young people, obtained by means of social and unemployment benefits. On the contrary, both these elements seem to be rather deficient in Mediterranean and Eastern countries. Moreover, countries far behind in terms of flexicurity (and, in particular, Mediterranean ones) neglected the accumulation of human capital of young people, reducing their employability and their capacity to adapt to a flexible word.

We can conclude that the process leading to flexibility must take place in a shared culture and involve the community as a whole. Young people must be considered a resource to be used to the best advantage. In this sense, the role of public institutions is to increase the "real options" of young people of both genders, providing resources to facilitate the achievement of the shared objectives or improving the capacity to convert the available resources into well-being.

Table 6 - Indicators within the flexicurity cluster analysis (*abbreviations in brackets*)

"FLEXIBILITY" (13 indicators)
FLEXIBLE CONTRACTUAL ARRANGEMENTS
EPL version 2 (TOTAL) (OECD, 2003) (*EPL*)
share of employment with fixed-term contracts 15-24 (*fixed15_24*)
share of employment with fixed-term contracts 25-29 (LFS, 2005 - quarterly microdata) (*fixed25_29*)
share of employment with part time 15-24 (*part15_24*)
share of employment with part time 25-29 (LFS microdata, 2005) (*part25_29*)
part time employment (as a % of the total employment) by education status: students 15-24 (LFS, 2005 – quarterly microdata) (*partstud15-24*)
part time employment (as a % of the total employment) by education status: students 25-29 (LFS, 2005 – quarterly microdata) (*partstud25-29*)
fixed term contracts (as a % of the total number of employees) by education status: students 15-24 (LFS, 2005 - quarterly microdata) (*FIX stud15-24*)
fixed term contracts (as a % of the total number of employees) by education status: students 25-29 (LFS, 2005 - quarterly microdata) (*FIX stud25-29*)
self-employed to employees ratio 15-24 (*Self_15_24*)
wage differential D90/D10 (Structure of Earnings, 2005, quoted in EC, Employment in Europe, 2005, p. 180, table 5) (*D90_D10*)
Involuntary part time young workers 15-24 (*Invol_part_15_24*)
Involuntary temporary contracts 15-24 (*Invol_temp_15_24*)
"SECURITY" (14 indicators)
COMPREHENSIVE LIFELONG LEARNING STRATEGIES
percentage in education 15-29 (LFS 2005 - quarterly microdata) (*%ed15_29*)
% of people under 30 in education that receive education allowances (EU-SILC, 2005) (*%ed_all*)
EFFECTIVE LABOUR MARKET POLICIES
expenditure in Active Labour Market Policies as % of GDP (eurostat 2-7) (*ActiveLMP*)
expenditure in Public Employment Services as % of GDP (eurostat 1) (*PES*)
MODERN SOCIAL SECURITY SYSTEMS
% of under 30 receiving social benefits (EU-SILC, 2005) (*%30soc_benefit*)
out of work income support as % of GDP (Passive Labour Market Policies – eurostat 8) (*PassiveLMP*)
% of under 30 beneficiaries of unemployment benefit (EU-SILC 2005) (*%un_benefit*)
Average of Net Replacement Rates over 60 months of unemployment (Oecd, 2004, Benefits and wages, Oecd indicators) (*NRR*)
CONTEXT AND "CAPABILITIES" INDICATORS
Human Development Index (Oecd) (*HDI*)
OECD-Pisa, 2003 (*PISA*)
% of 20-29 having completed at least upper secondary school (EU-SILC, 2005) (*%upsec20-29*)
poverty indicator (percentage of under 30 whose poverty indicator is positive in EU-SILC2005) (*povertytrap*)
employment impact of parenthood[28] (data 2005, in EC Compendium for monitoring employment, 2008) (*Parenthood*)
% of under 2 that benefit of child-care services (EC-Compendium, 2008) (*Childcare*)

[28] It is the difference in percentage point in employment rates without the presence of any children and with the presence of a child aged 0-6, by sex (age group 20-49); Euclidean distance between males and females.

LABOUR MARKET OUTCOMES (13 indicators)
employment rates 15-24 (*empl_rate15-24*)
employment rates 25-29 (*empl_rate25-29*)
unemployment rates 15-24 (*unemp_rate15-24*)
unemployment rates 25-29 (*unemp_rate25-29*)
long-term unemployment 15-24 (*long_unemp15-24*)
long-term unemployment 25-29 (*long_unemp25-29*)
Discouraged rate (Young people who do not search for a job because they think it is not available) 15-24 (*Discouraged_15_24*)
Expected length of school-to-work transitions in selected OECD countries, 2005 (Quintini et al., EU LFS 2005 estimates shown in Table 2).[29] (*school to work*)
Vacancies per 1000 unemployed (data 2005, in EC Compendium for monitoring employment, 2008) (*Vacancies*)
labour turnover[30] for young workers (15-29) (LFS microdata, 2005) (*turnover15_29*)
Difference in labour turnover between adult and young workers (30-64 versus 15-29 years old) (LFS microdata, 2005) (*turnover_youth_ad*)
labour productivity per person employed (EU27=100) (*lab_produc*)
growth in labour productivity (2005-2000) (*growth_prod*)
NEET rates 15-29 (LFS microdata, 2005) (*NEET15-29*)

Source: when the source of data is not specified in the table, they are macrodata downloaded by Eurostat website, year 2005, in case of LFS: spring data.

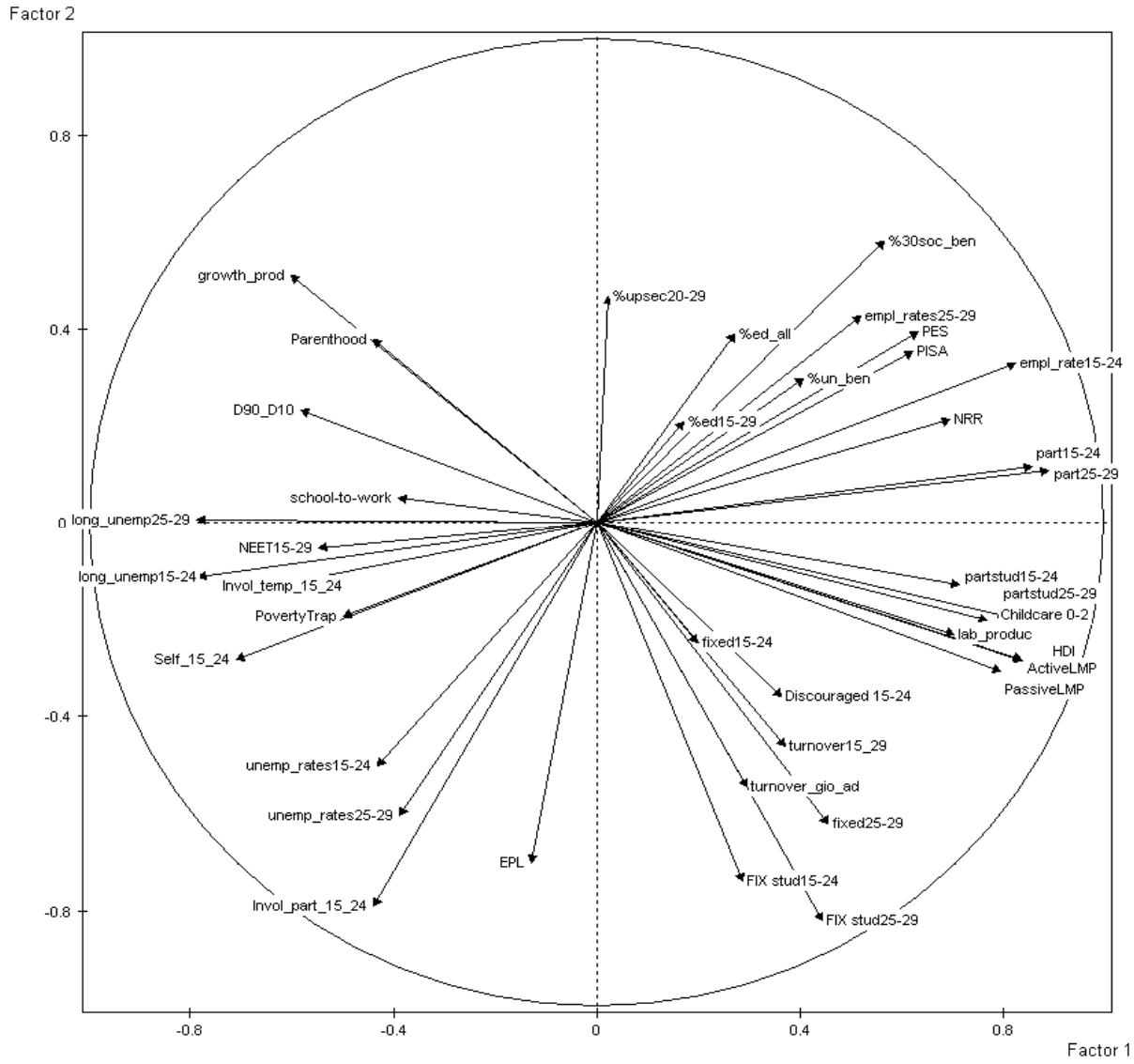
[29] Quintini et al., 2007, "…It is possible to use cross-section data from the EU Labour Force Survey (EU LFS) to derive an alternative proxy for the average length of time it takes someone leaving education in Europe to find a first job. Here the concept used is the difference between the average age when 50% of those aged 15-28 are no longer in education and the average age when 50% of the same age group are in employment for the year in question. This proxy measure then corresponds to the difference in the median ages of being in education as opposed to having a first job. It has the advantage that it can be estimated over time so that one can assess changes in the average length of the transition over the past decade…"

[30] Labour turnover$_{(2005)}$ = HR + FR where:

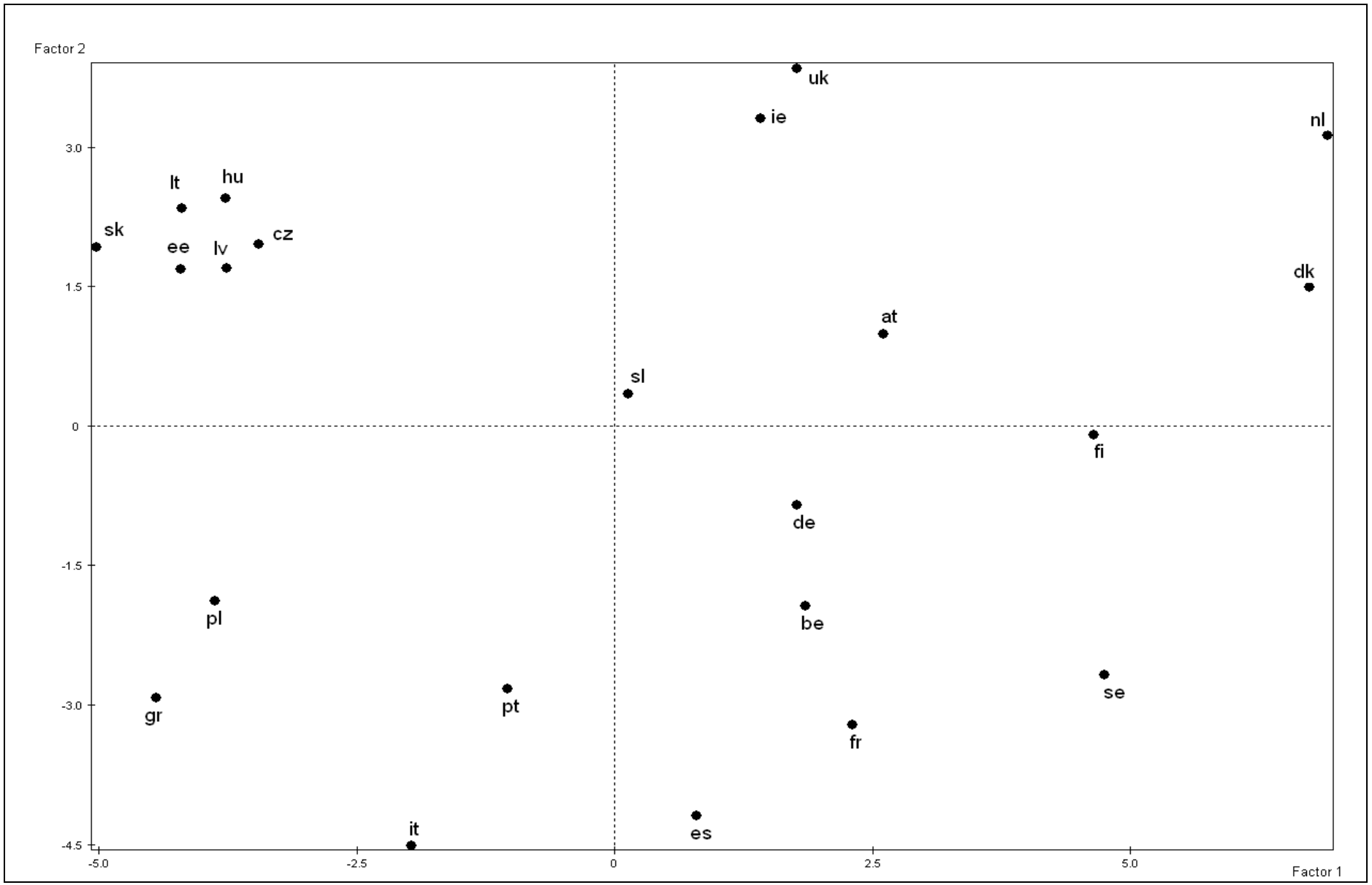
the hiring rate, HR, is $$HR_{2005} = \frac{no.\ of\ workers\ who\ started\ to\ work\ in\ 2005}{Employment\ in\ 2005}$$

and the firing rate, FR, is $$FR_{2005} = \frac{no.\ of\ workers\ who\ lost\ their\ jobs\ in\ 2005}{Employment\ in\ 2005}$$

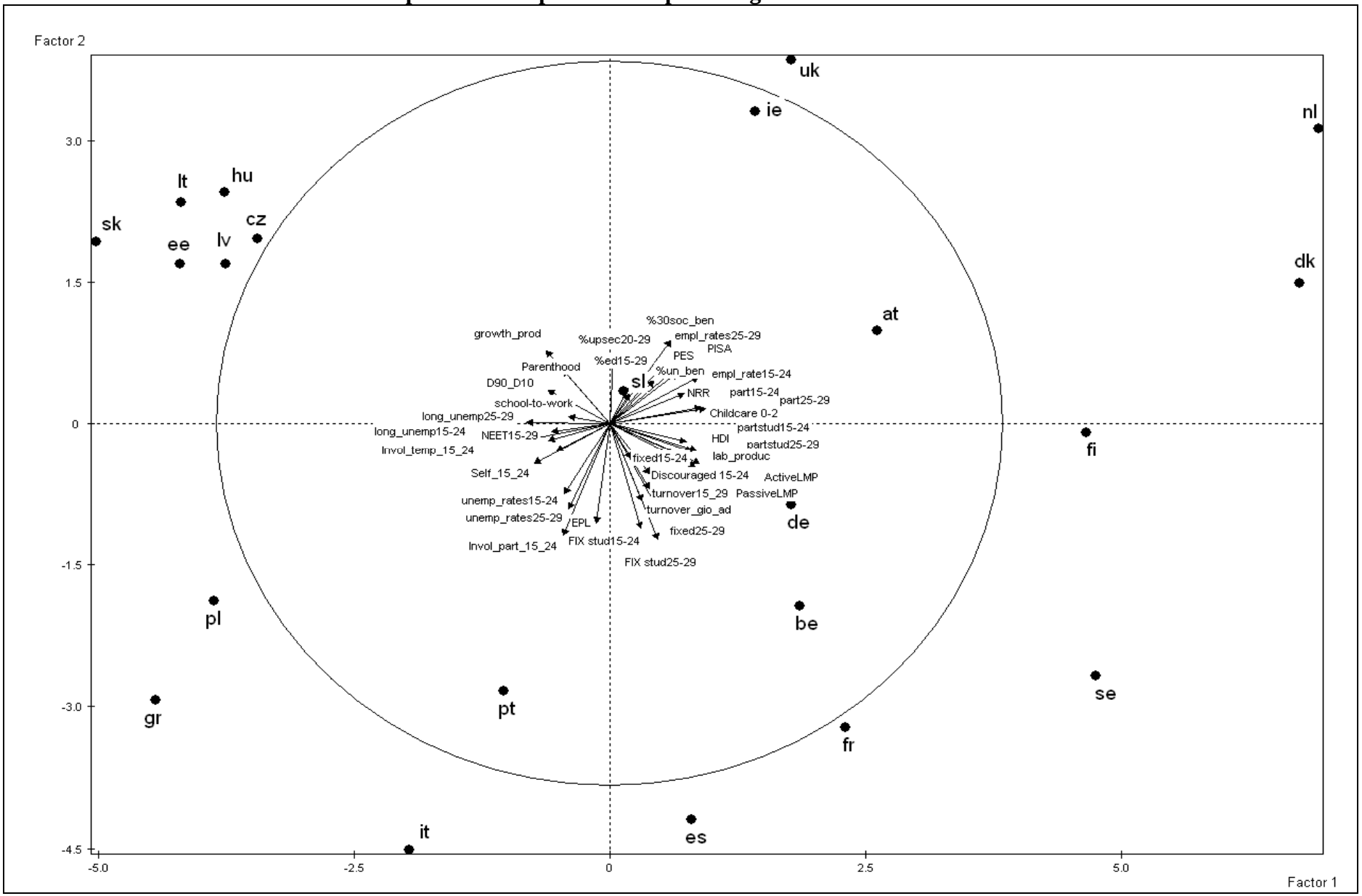
Graph. 1 – Principal factorial plane: the circumference of correlations



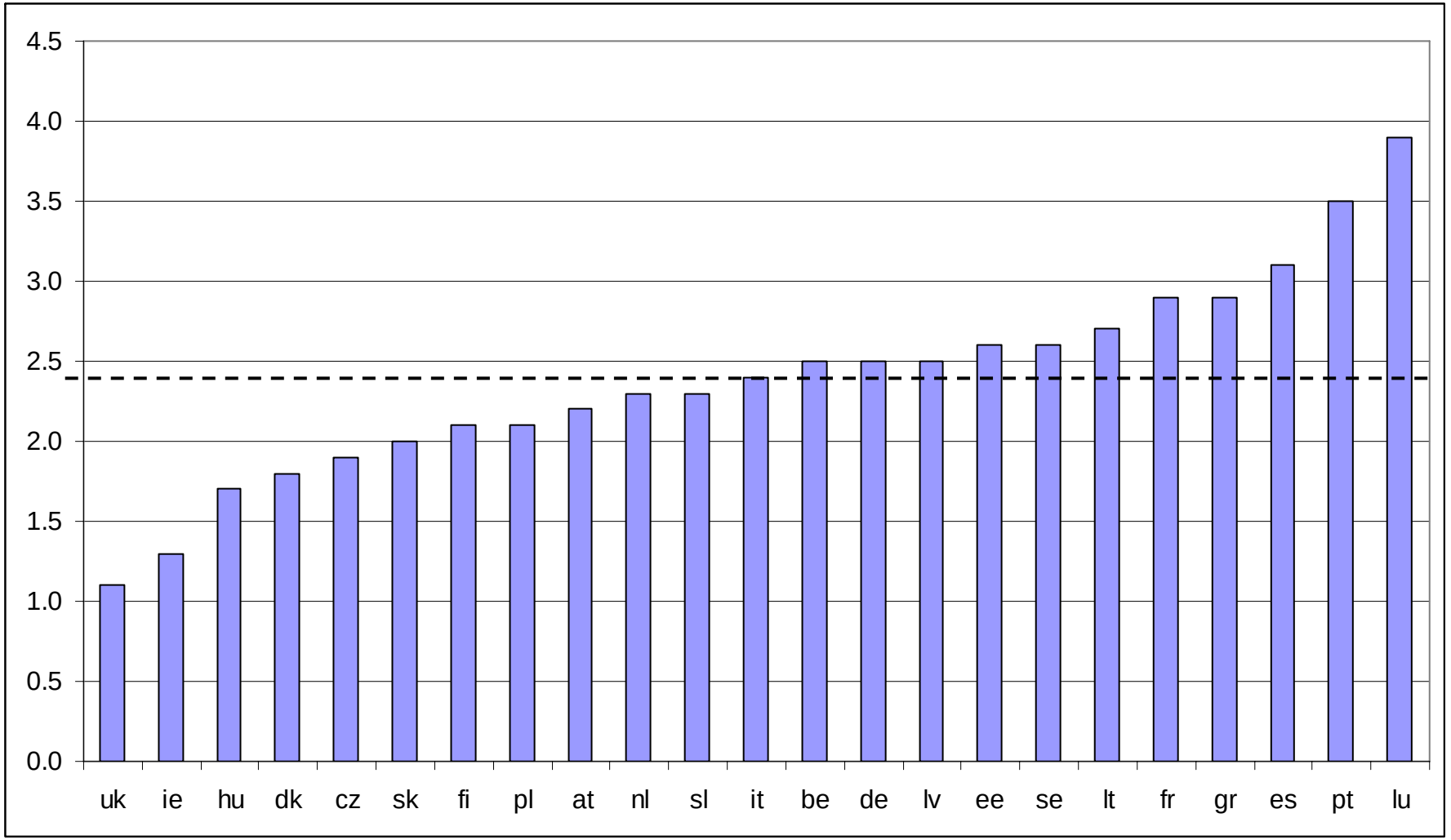
Graph. 2 – Position of countries on principal factorial plane



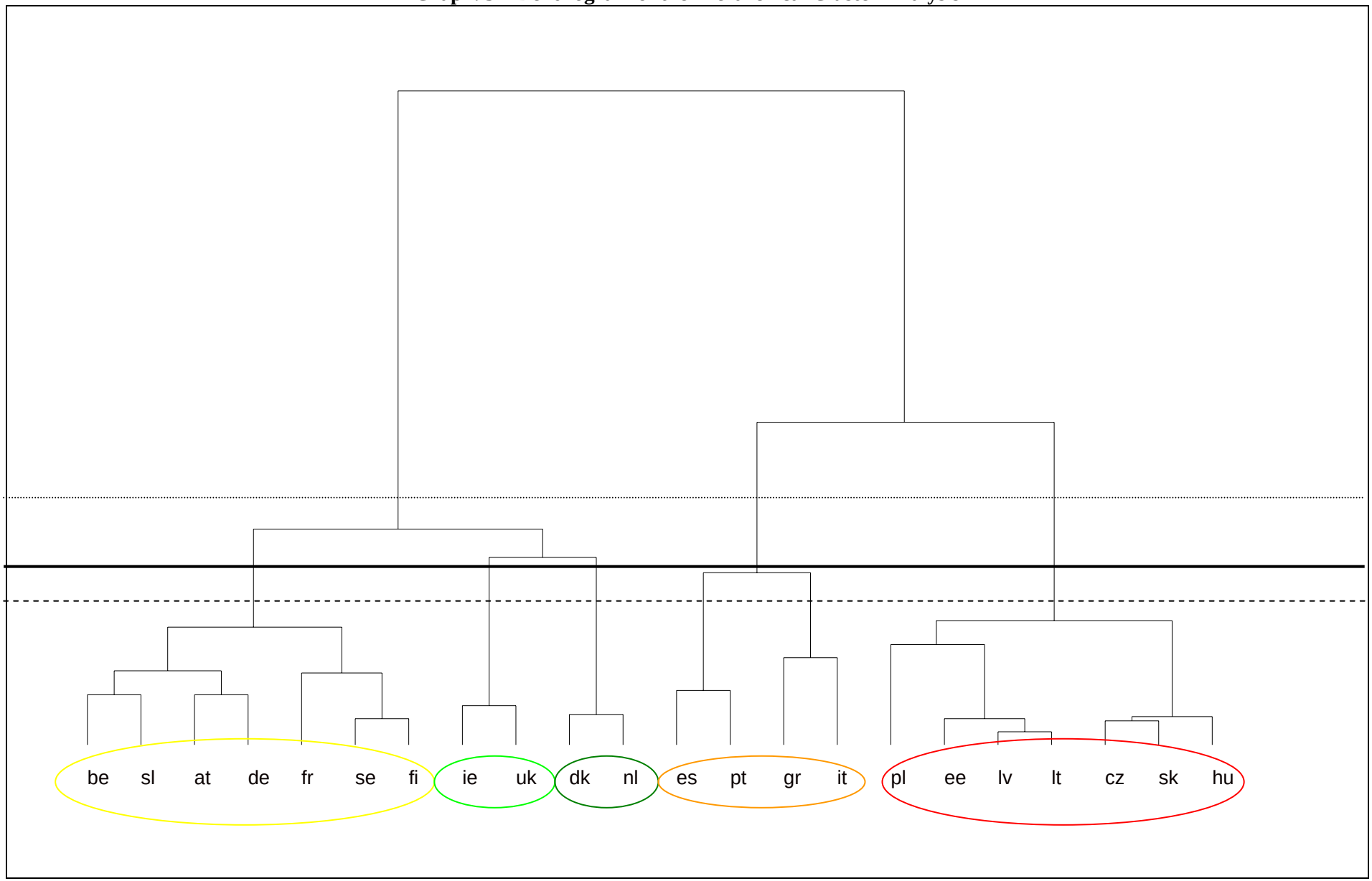
Graph. 3 – Principal factorial plane: eigenvectors and countries



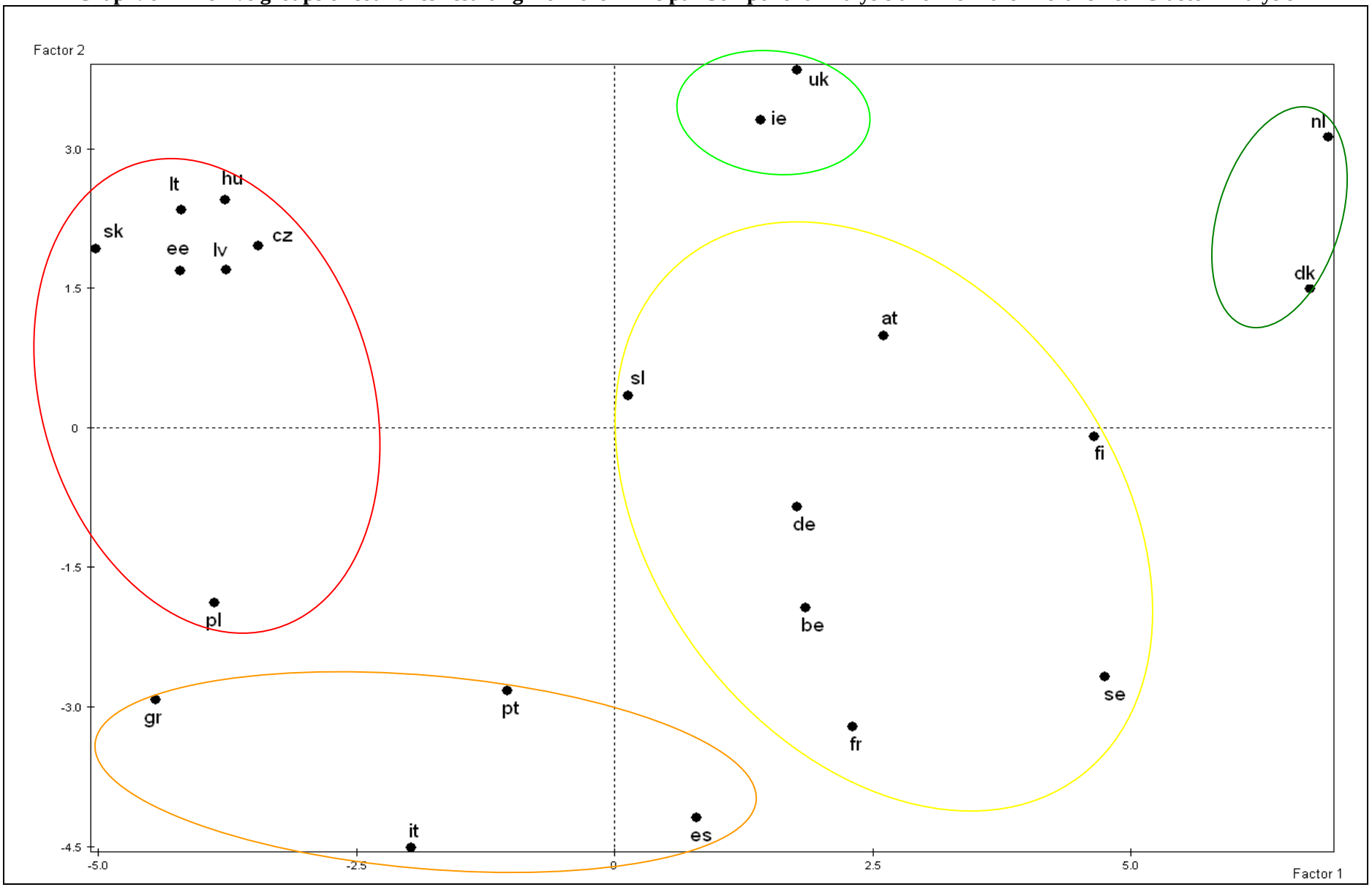
Graph. 4 – EPL Version 2 (TOTAL), OECD 2003



Graph. 5 – Dendrogram of the Hierarchical Cluster Analysis



Graph. 6 – The five groups of countries resulting from the Principal Component Analysis and from the Hierarchical Cluster Analysis



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