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JOB SATISFACTION AS AN ASSESSMENT CRITERION OF LABOR MARKET POLICY EFFICIENCY

LESSON FOR POLAND FROM INTERNATIONAL EXPERIENCE

by

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Job Satisfaction as an Assessment Criterion of Labor Market Policy Efficiency.

Lesson for Poland from International Experience.

Preliminary Analysis[1]

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1. Motivation

The goal of the study is the assessment and measurement of the job related satisfaction perception among employees. The measurement of the job related satisfaction perception is the alternative criterion for the common measurement techniques used traditionally for the assessment of labor policy effectiveness and efficiency. The task to improve the perceived level of job related satisfaction might be considered as a tool for increasing the employees' loyalty towards firm, for increasing the motivation efficiency and the compensation effectiveness of enterprises' human resources. To achieve the formulated goal of the study – the benchmark values are needed. It is assumed that as a reference for Poland the situation in *old* European Union member countries may be used. Important issue is which *old* European Union member countries may be used as an example solution for Polish policy that is based on *Best European Practice*. This problem will be solved by identifying common patterns, classifying the countries into homogenous clusters based on similarities in the job related satisfaction perception schemes.

International research (OECD, UNO, Eurostat) indicates that efficiency of the Polish labor-market policy is much lower than in the *old* EU Member states. The obvious indicator is that the Polish unemployment rate is the highest in the whole European Community (approximately 21% in year 2003). It means that there is a lesson to learn from the past developments observed in the *old* EU Member countries. The assumption that there are universal development patterns and universal patterns of the employees behavior justifies the transferability of the observed, identified knowledge describing the sources, types and importance of the job satisfaction for the job market institution activities assessment. The main idea is that on the base of information collected in the *old* European Union Member Countries – the identified *Best European Practice* in creating job related satisfaction may be transferred as a solution proposal to the *new* EU Member states, in particular to Poland.

On the other hand – one may observe that for the assessment of the effectiveness and efficiency of the national labor market policy – in most cases the descriptive, quantitative statistical data is used, among them rate of unemployment, employment ratio, etc. Such information is provided by official, state statistics system, and state labor authorities.

In the paper, authors are introducing other, innovative approach towards the assessment of the effectiveness and efficiency of the national labor market policy. It is assumed, that the one of main actors on the labor market should be considered, namely employees. In this approach, the employee is transferred from being object of the policy towards being subject of the analysis – she(he) may formulate own preferences concerning job, labor market and labor

policy. This new innovative approach proposed considers level of job satisfaction as an assessment criterion for Labor Market policy efficiency. For that purpose the existing database, namely the ECHP – European Community Household Panel will be used. In order to be able to do comparison with Poland – the ECHP information are confronted with the Polish data. Since Polish Household Panel data do not include information on job related satisfaction, the special survey was prepared and was conducted by TNS OBOP (Polish Social Survey Agency) in April 2005, before the study visit in the research institution in Differdange, Luxembourg.

2.   Scope of the research

Cross-national and inter-temporal comparisons were conducted based on two sources of data: first was personal and household data gathered in ECHP database – European Community Household Panel, and second was Polish data from special survey conducted in the area of Lower Silesia (South – West part of Poland). The data from ECHP covering period from 1994 to 2001 were used. The Polish data was conducted for group of respondents[2]: sample 1200 employees from Wroclaw Agglomeration area (nine administrative districts – see Picture 1, age 15 – 65, sample selection method: stratified random sampling, way of research execution – professional interviewer, individual interview face to face). Analyzes was conducted in SPSS format. Respondents' characteristics for both samples are presented in Table 1 and 2.

The tasks for descriptive and in–depth analyses of statistical data included: cross–national and inter–temporal comparison of collected and acquired data. deep insight into all important aspects of the job related satisfaction i.e. satisfaction with type of activity, job security, earnings, working condition, distance to job place, etc. in *old* EU Member states and in Poland.

Methodological framework: the multivariate statistical framework and multidimensional statistical methods of comparison was used, especially *descriptive statistics* and *variables distributions analysis* for cross–national and inter–temporal comparison of job satisfaction in *old* EU countries, differences and similarities identification, assessment of Polish situation versus situation in the *old* EU countries, *cross tabs* for investigation of dependence between perception of the job related satisfaction and demographic and professional features of respondents, *multivariate clustering methods* for giving the possibility for assessment of homogenous groups separation based on job satisfaction perception; *econometrics modeling methods* for identification of main factors influencing job related satisfaction perception, de-

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[2] The survey was financed by a European Social Funds – Research Project No Z/2.02/II/2.1/29/04/U/6/04: *Labor market in Wroclaw's agglomeration: present and future.*

termination of the intensity of influence of selected features on job satisfaction, identification of differences and similarities between Poland and *old* EU countries,
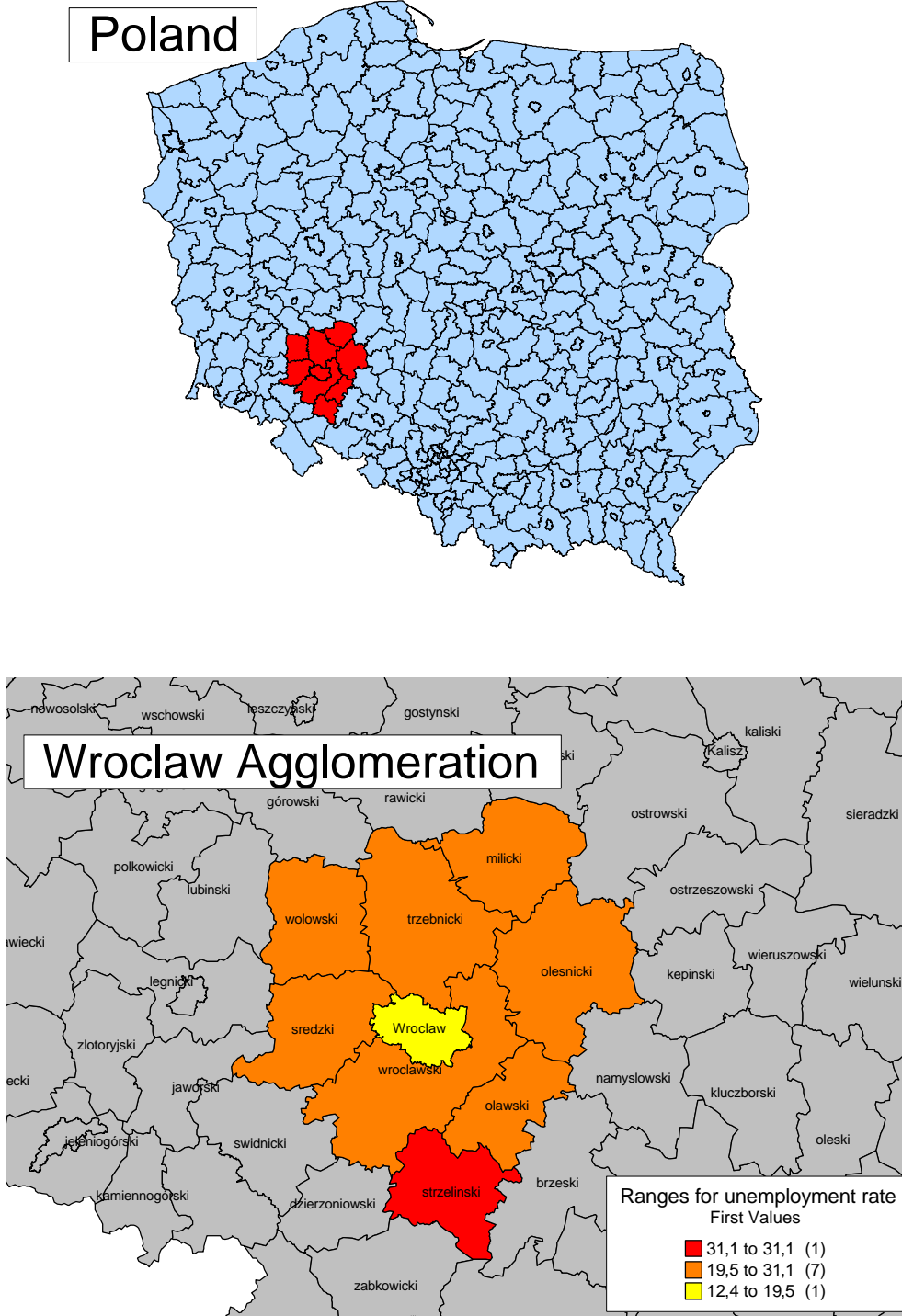
Picture 1. Poland and Wroclaw Agglomeration.

Table 1. Respondents' characteristics – sample 1: ECHP data base, 2001, demographic and professional features, sample size: 64 113 respondents

Country							
Denmark	Holland	Belgium	France	Ireland	Italy	Greece	Spain
3,8	7,6	3,6	8,0	3,3	9,5	6,5	8,2
Portugal	Austria	Finland	Sweden	Germany	Luxembourg	UK	Total
9,4	4,6	5,3	9,0	9,4	4,1	7,8	100

Age				
<= 25	26–35	36–50	51–65	> 65
14,6	25,0	39,6	19,8	1,0

Sex		Cohabitation status	
male	female	couple	not couple
57,3	42.7	73,8	26,2

Main activity		
agriculture	industry	services
7,0	28,1	64,9

Job status		
supervisory	intermediate	non–supervisory
11,8	15,3	72,9

Village or town		
village	small or middle–sized town	larger town
38,5	26,6	34,9

Household with dependent children	
no	yes
48,3	51,7

Table 2. Respondents' characteristics – sample 2: Wroclaw Agglomeration, 2005, demographic and professional features, sample size: 1200 respondents.

Age				
<= 25	26–35	36–50	51–65	> 65
11,5	30,3	38,8	19,1	0,3

Sex		Cohabitation status	
Male	female	couple	not couple
49,3	50,7	72,7	27,3

Main activity		
agriculture	industry	services
6,6	16,6	76,8

Job status		
supervisory	intermediate	non–supervisory
8,6	59,4	31,9

Village or town		
village	small or middle–sized town	larger town
22,4	17,6	60,1

Household with dependent children	
no	yes
39,3	60,7

I. Job qualification analysis

1. Analysis of answers to questions connected with vocational training or education

Two questions answers were analyzed:

1. Have you had formal training or education that has given you skills needed for your present type of work? advantageous variants of answers: yes
2. Do you feel that you have skills or qualifications to do a more demanding job than the one you have now? advantageous variants of answers: no

Results analysis is presented in Figures 1 and 2. Time series presents data for sample from ECHP database for period 1994 – 2001, and as straight line (without points) data for Wroclaw Agglomeration for April 2005.

A result of the analysis based on criteria such as countries, demographic and professional features is presented in Figure 1. The unfavorable situation as far as job qualifications are concerned may be observed mainly in Portugal and Italy, where almost half of respondents perform their jobs without having a proper job training/education. The high percentages of people that do have the right professional qualifications are respondents coming from the Netherlands, Denmark, Austria and Finland. What needs to be emphasized at this point is that in the Netherlands 100 % of respondents have declared that they have the right job qualifications, which may raise doubts about the credibility of their responses (it is the reason why the results for The Netherlands is omitted on the Figure 1). It is striking that extremely high percent of respondents from Wroclaw Agglomeration declared having proper qualification for current job (88,8% (!!!) much higher than in other EU countries except Holland). There are two reason of such situation: question misunderstanding or very optimistic (not realistic) approach to job qualification from analyzed respondents' point of view.

The analysis of answers to the question connected with having skills or qualifications to do a more demanding job the answer **NO**, is considered favorable. This is so, because this response confirm correct situation in labor market. It means that respondent does a job adequate for his qualification and he has not needed for more demanding job. Such statement is true only on condition that respondent has right qualification for current job (in previous question answer yes). For analyzed countries, the highest percentage of answer NO occurred for The Netherlands and for Portugal. However, situation in these countries are quite different. In The Netherlands, respondents declare right skills and qualification for current job and it confirms the favorable assessment of the situation. In Portugal – the situation is different, more than 50% said NO for the question whether they have skills or qualifications to do a more demanding job, but simultaneously they assess their qualification for current job as inadequate. Re-

spondents from Wroclaw Agglomeration, similar like in previous question, very often (70,7%!), declared having qualifications to do a more demanding activity (job). It confirms their rather not critical assessment of own job qualification.
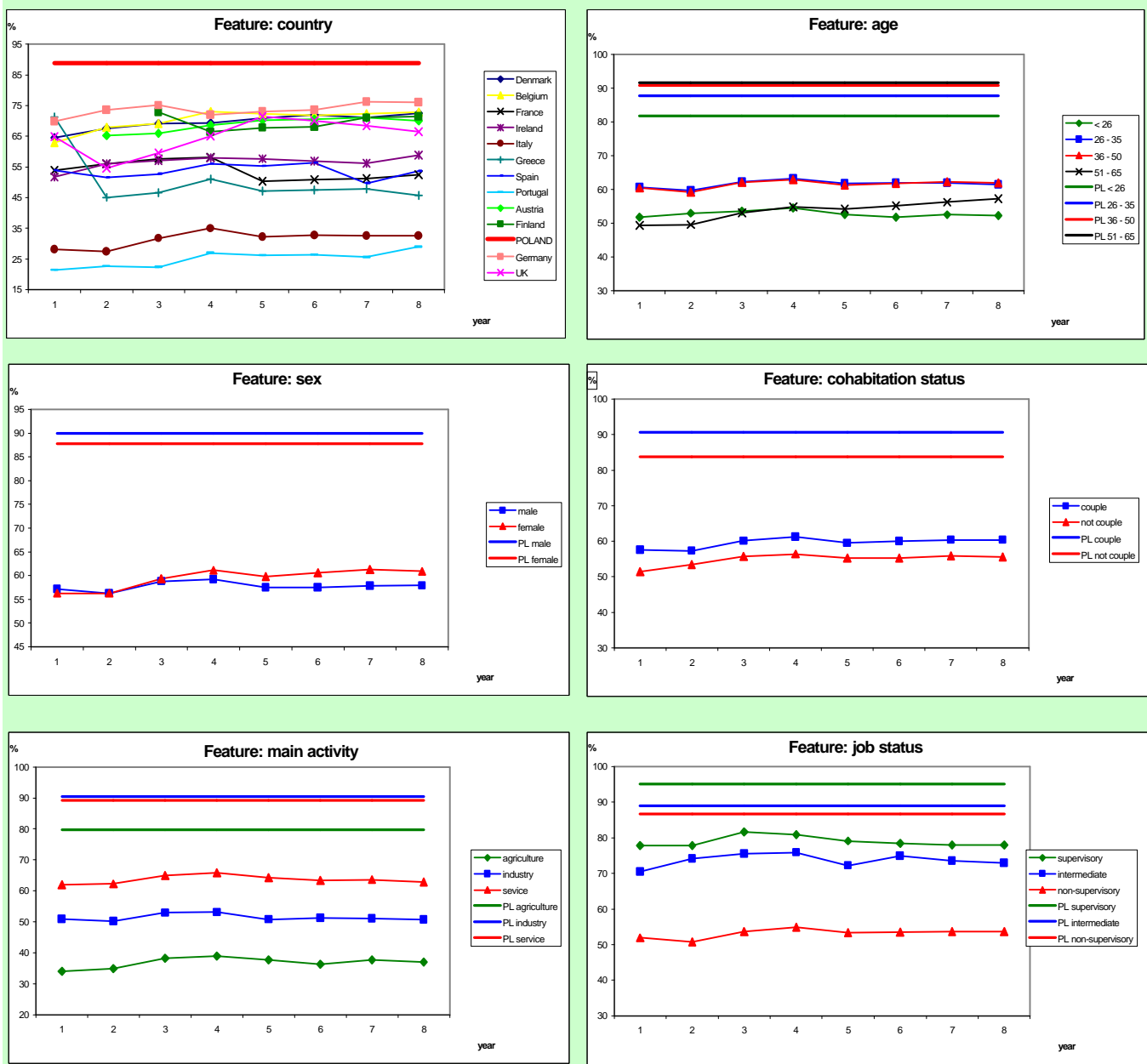

Figure. 1. Question: *Have you had formal training or education that has given you skills needed for your present type of work?* Answer YES – results analysis in accordance with country, demographic and professional features.

Results analysis – formal training: there are no significant differences in answers in both samples when demographic features are concerned. For ECHP respondents – the analysis of the professional features show significant differences in formal training or education for people work in agriculture (37%) and other type of activity (e.g. services 65%), and also for people with different job status (supervisory declare 78% versus non–supervisory approximately 53%). Much lower differentiation is observed for Agglomeration sample.
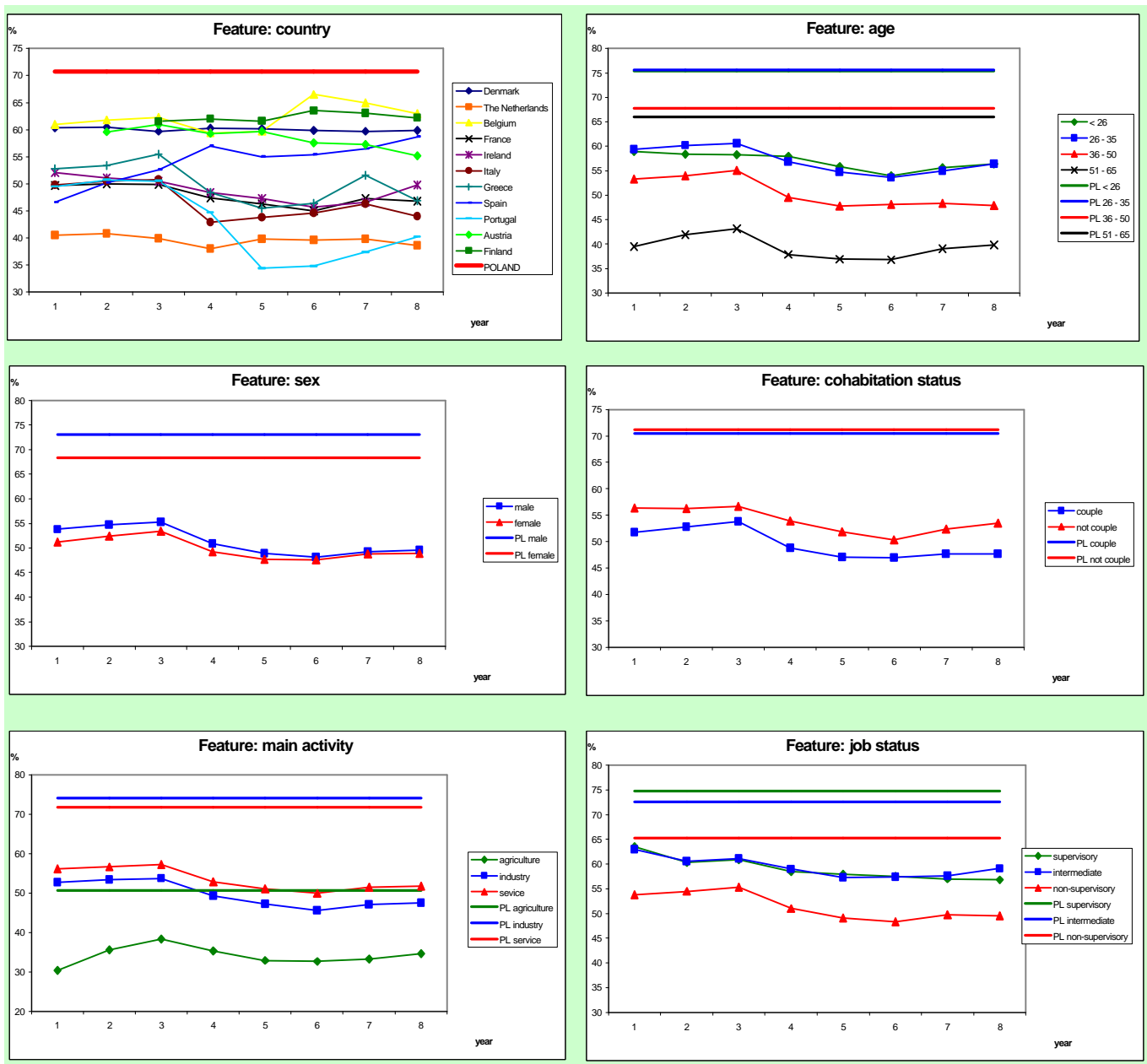
Figure. 2 Question: *Do you feel that you have skills or qualifications to do a more demanding job than the one you have now?* Answer YES – results analysis in accordance with countries, demographic and professional features.

Results analysis – skills or qualifications for more demanding job: For demographic features, there is a significant difference only for feature *age*, especially for ECHP respondents. Highest percentage of those who declare having ability to does more demanding job show young persons (under 35 years of age). For professional features in both samples, there are large differences between people active in agriculture, industry and services. Supervisory in both samples declare qualifications to do more demanding job more often than other persons.

Comparisons for both samples based on answers to question: *Have you been in education or training since January last year?* are presented in Figure 3. Results are quite different with those presented in official statistics (according to the OECD materials, Poland occupies one of the last positions among EU countries in ranking describing lifelong learning). Misunderstanding the intention contained in the question – e.g. declaration of every type of vocational instruction, even obligatory, as participation in vocational course, probably was the main reason of these discrepancies. This suggestion may be confirmed by the fact, that there is significantly higher percent of participation in vocational courses, accompanied by the observation that, for Wroclaw Agglomeration, simultaneously one can observe much lower activity in other types of education or training.

Figure 4 presents results of the analysis done for sample from Wroclaw Agglomeration concerning answers to the question whether there was participation in education or training since January last year. Additionally, there is illustration assessing the usefulness of different types of education or training. Respondents declared most often participation in vocational course (79.4%), next are people who are studying in university level institutions (11.2%) and on postgraduate courses (7.8%). Participation in language courses was very low, only 6% of the respondents. From assessment point of view, the most frequent respondents' answer was *very useful* – especially for higher education (45.2%) and postgraduate courses (40.5%).
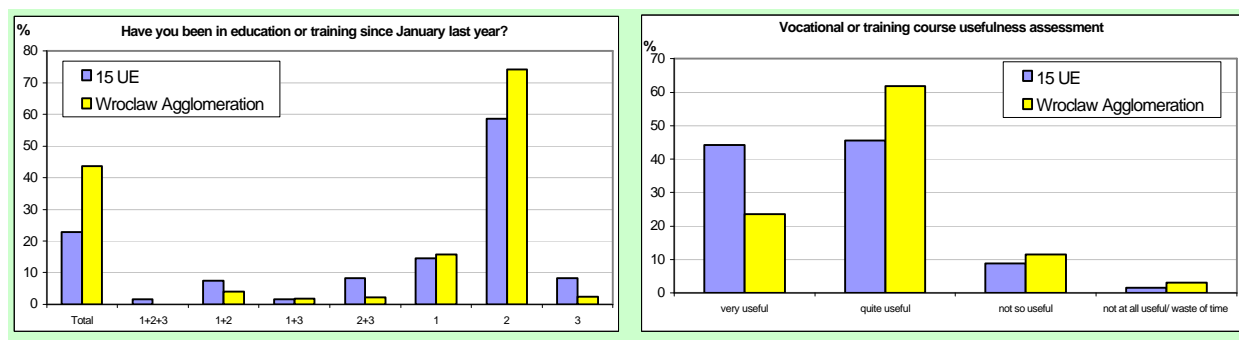
Legend: 1 – general or higher education
   2 – vocational or training course
   3 – language or other adult education course

Figure 3. Question: *Have you been in education or training since January last year?* Answer YES (left) and vocational or training course usefulness assessment (right)
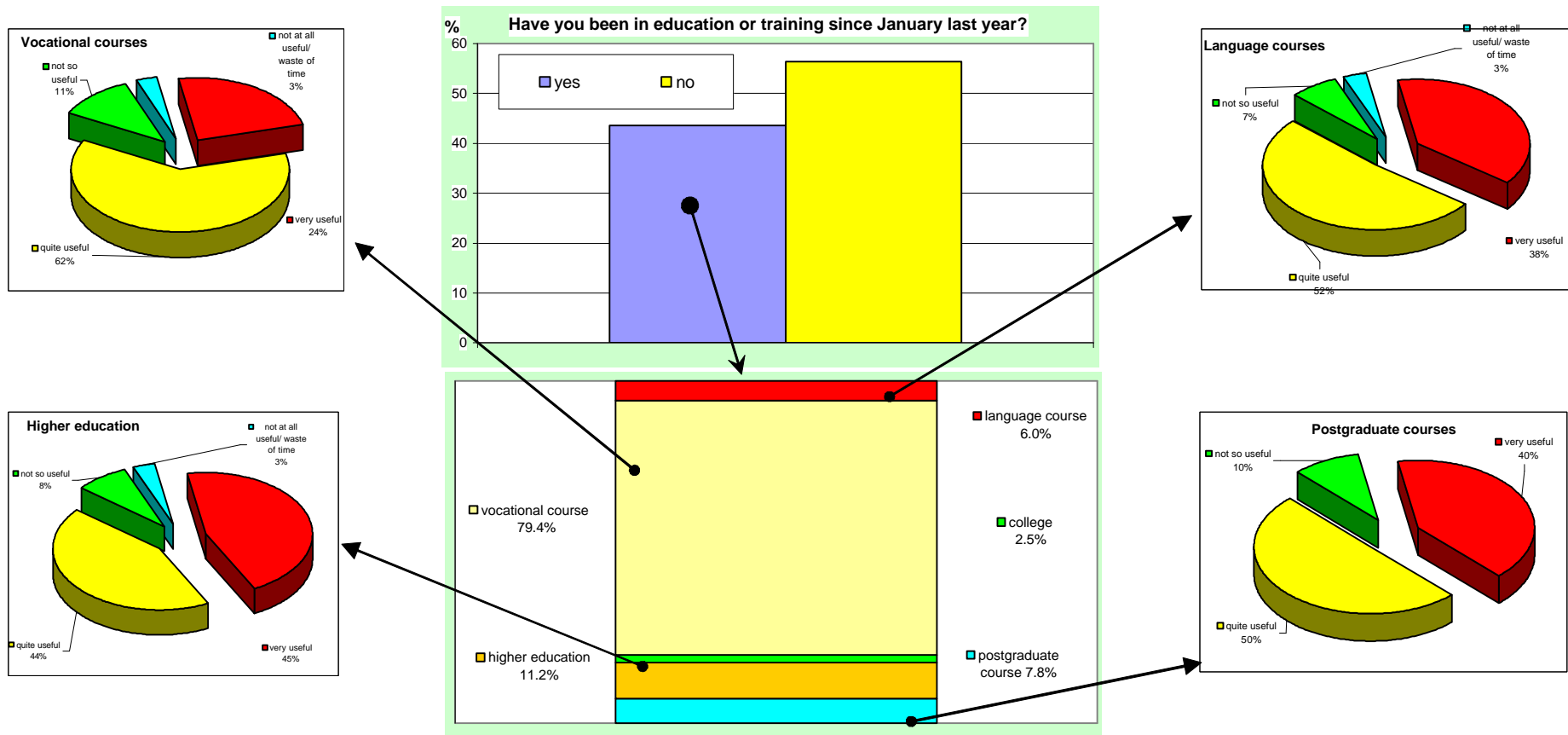
Figure 4. Different type of education or training usefulness assessment. Question: *Have you been in education or training since January last year?*

2. Looking for job analysis

Questions answer concerning looking for job (new job or additional job) was analyzed. For majority of *old* EU countries percentage of persons who is looking for job is not higher than 13% (the lowest in Portugal 3%, the highest in Denmark almost 13%. Exception is Dutch people, 21% of them claim that they are looking for job. Among respondents from Agglomeration – very high share of persons is looking for new or additional job (24.3%). Analysis of the demographic features shows that young single persons much often are looking for new job than the rest. In Wroclaw Agglomeration, in opposite to ECHP sample, males, much often than females, are looking for other job. Person with high job status (supervisory) rarely are looking for job (14% versus 25% for others).
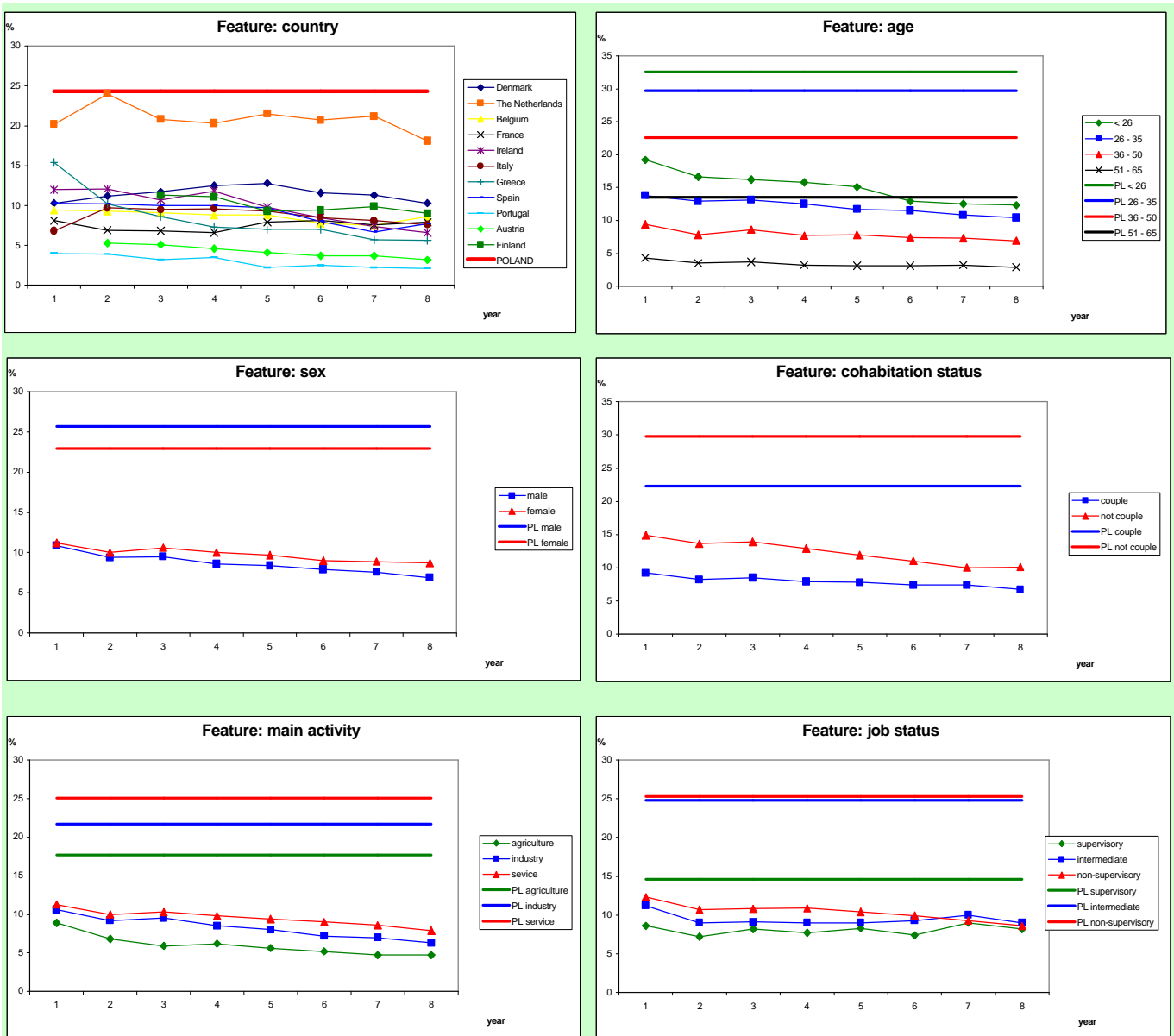

Figure 3. Question: Looking for job, answer yes – results analysis according with countries, demographic and professional features.

II. Job satisfaction analysis

3. Dynamic analysis of job satisfaction

Five question concerning job satisfaction were analyzed:

1. *How satisfied are you with your present job in terms of earnings?*
   not at all ☹ ☹ ☺ ☺ fully satisfied
2. *How satisfied are you with your present job in terms of job security?*
   not at all ☹ ☹ ☺ ☺ fully satisfied
3. *How satisfied are you with your present job in terms of type of work?*
   not at all ☹ ☹ ☺ ☺ fully satisfied
4. *How satisfied are you with your present job in terms of working conditions/environment?*
   not at all ☹ ☹ ☺ ☺ fully satisfied
5. *How satisfied are you with your present job in terms of distance to job/commuting?*
   not at all ☹ ☹ ☺ ☺ fully satisfied

In each question, respondents had possibility to choose from six level of job satisfaction perception: from not at all – to fully satisfied. For transparency of the analysis – answers to the questions concerning job satisfaction were aggregated to two options: not satisfied; satisfied.

Analysis in accordance with respondents' nationality shows significant differences in perception of job satisfaction. Person from the Mediterranean countries (Greece, Spain, Italy, Portugal) are far less frequently satisfied than other respondents. In opposite among Dutch respondents, the highest percentage of person fully satisfied with current job situation was observed. This statement pointed out different effectiveness of labor market policy in different EU countries. It also confirms observation based on qualitative statistical data. Consideration allows statement that there are countries may be considered as pattern (best European practice) in the field of proper implementation of the labor market solutions. Solutions, which guarantee employees, job satisfaction. To this group of countries belong: Holland, Denmark, Ireland, and Austria.

Respondents from Wroclaw Agglomeration demonstrate low level of satisfaction with earnings and job security, and average level of satisfaction with other fields of job satisfaction It is probably most important reason why very high percentage of persons are looking for job (other or additional). For Agglomeration respondents, the significant differentiation was observed when demographic and professional features are taken into consideration.

Analysis results are presented in Figures 4 – 8. Similar like in other Figures – time series present data for sample from ECHP database for period 1994 – 2001, and straight line (without points) show data for Wroclaw Agglomeration for April 2005.
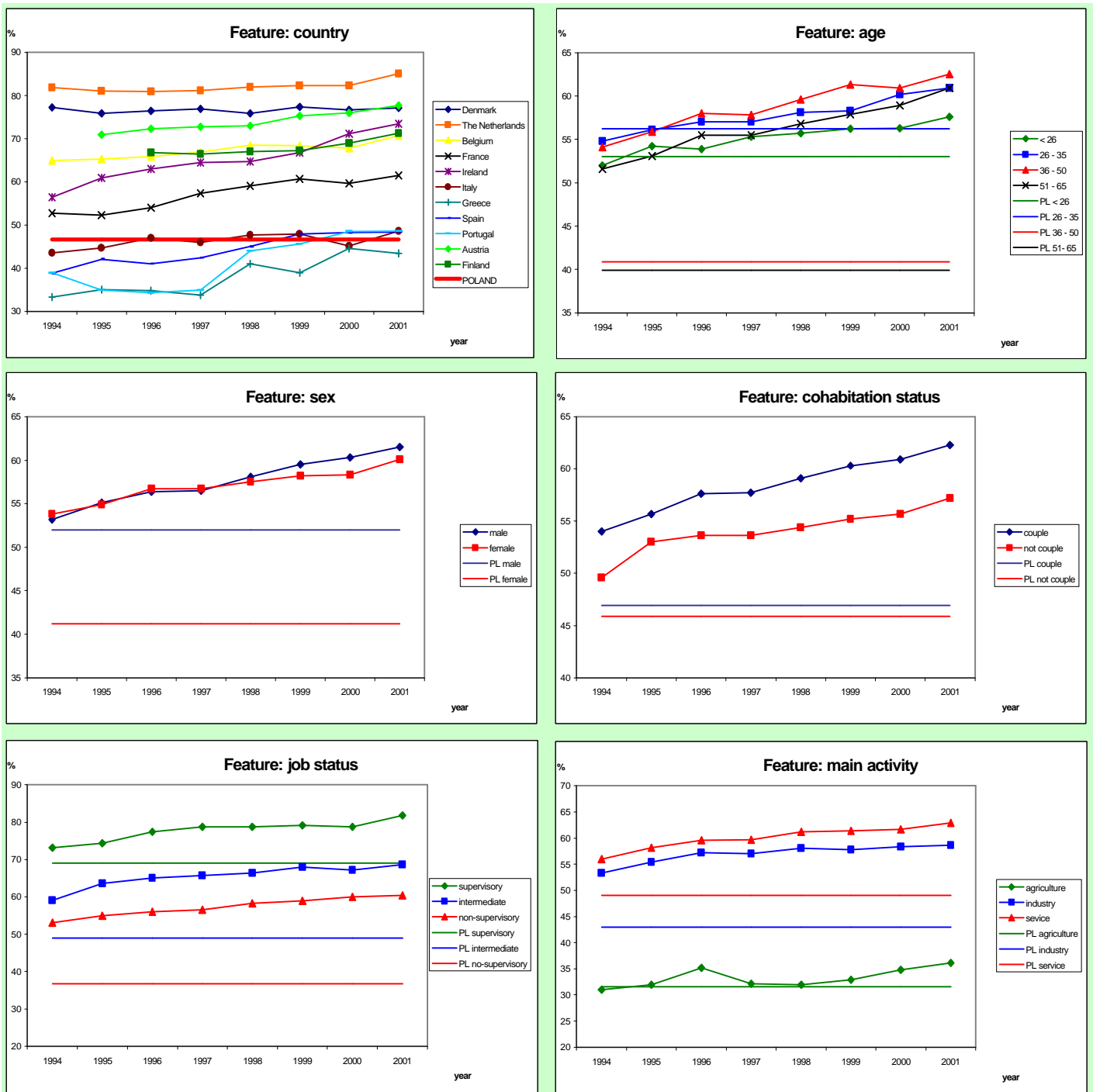
Figure. 4. *Question: How satisfied are you with your present job in terms of earnings?* Answer YES – results analysis in accordance with countries, demographic and professional features.

Results analysis – satisfaction with earnings: The analysis based on age shows small differences in sample from ECHP and significant differences in sample from Agglomeration. In particular, it is significant for comparison of answers of younger respondents (below 35 years old) with other groups of respondents. Similar situation is observed for male and female subpopulations – there are no differences in ECHP sample. In contrast, there is much lower level of satisfaction among females in Agglomeration. For professional features, as expected in both samples very low level of satisfaction characterizes persons working in agriculture.
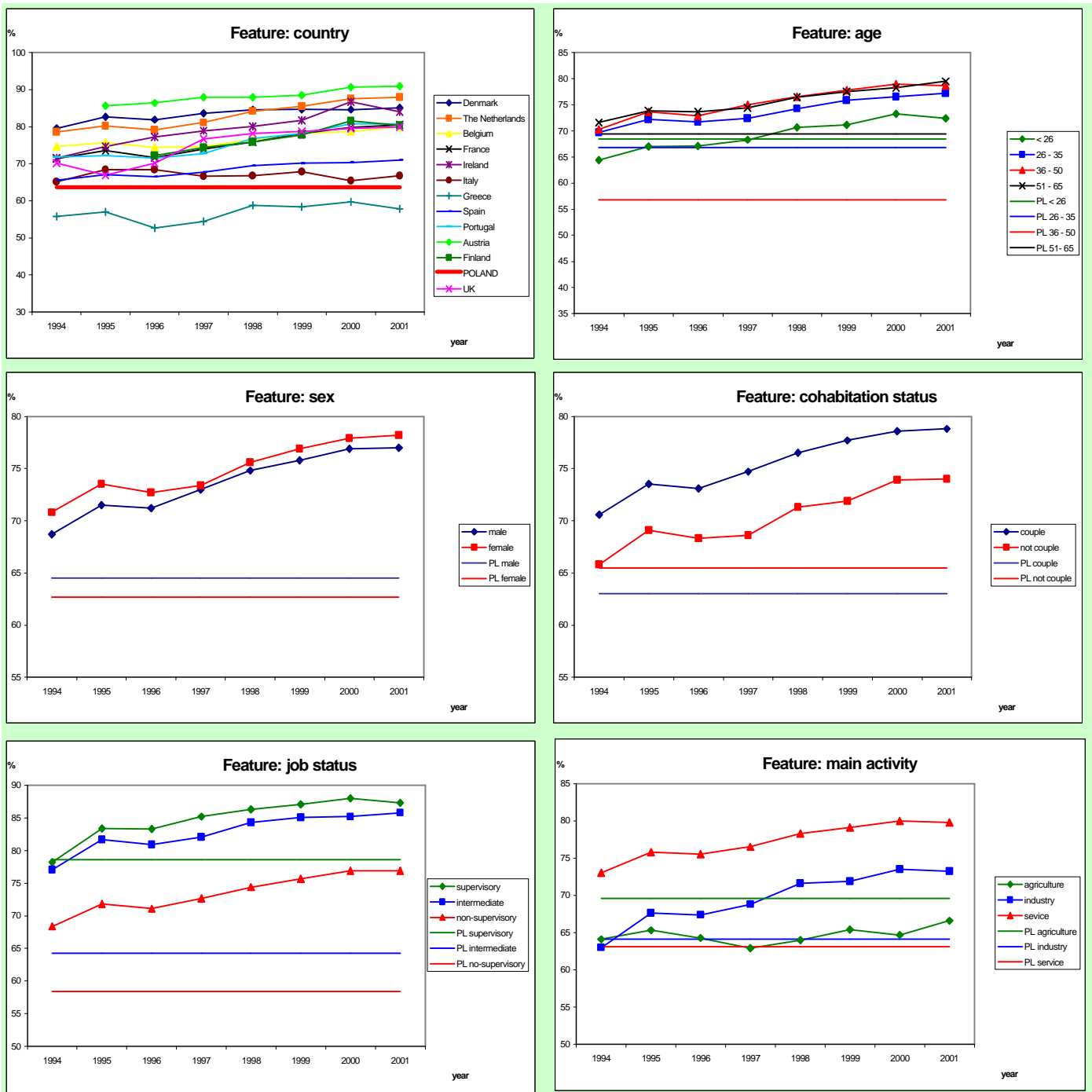
Figure. 5. Question: How satisfied are you with your present job in terms of job security? Answer yes – results analysis according with countries, demographic and professional features.

Results analysis – satisfaction with job security: analysis based on age show different situation between both samples. For sample from ECHP, the lowest level of satisfaction is observed in youngest group. In opposite, in Agglomeration the most threat is observed for persons from group 36 – 50 years of age. Also for professional features there are significant differences in both samples. For feature *main activity* for ECHP respondents, the highest level of satisfaction show persons working in services, in opposite in Agglomeration those people demonstrate the lowest level of satisfaction.

Figure. 6. Question: *How satisfied are you with your present job in terms of type of work?* Answer YES – results analysis according with countries, demographic and professional features.

Results analysis – satisfaction with type of work: analysis based on *age* show different situation between both samples. For respondents from ECHP the most people who claim to be satisfied are members of the group of 36 – 50 years olds. In the Agglomeration – the group 51 – 65 years old are most satisfied. For feature *main activity,* one can observe high differences in sample from ECHP and no differences for Agglomeration.

Figure. 7. Question: *How satisfied are you with your present job in terms of working conditions/environment?* Answer YES – results analysis according with countries, demographic and professional features.

Results analysis – satisfaction with working conditions: analysis based on age shows different situation between both samples – no differences in sample from ECHP and much higher level of satisfaction for group 51 – 65 years old in Agglomeration. For feature *main activity* one can observe, that similar as for the satisfaction with job security in the ECHP sample, the highest level of satisfaction demonstrate persons working in services, and in contrast – in Agglomeration this group is least satisfied.
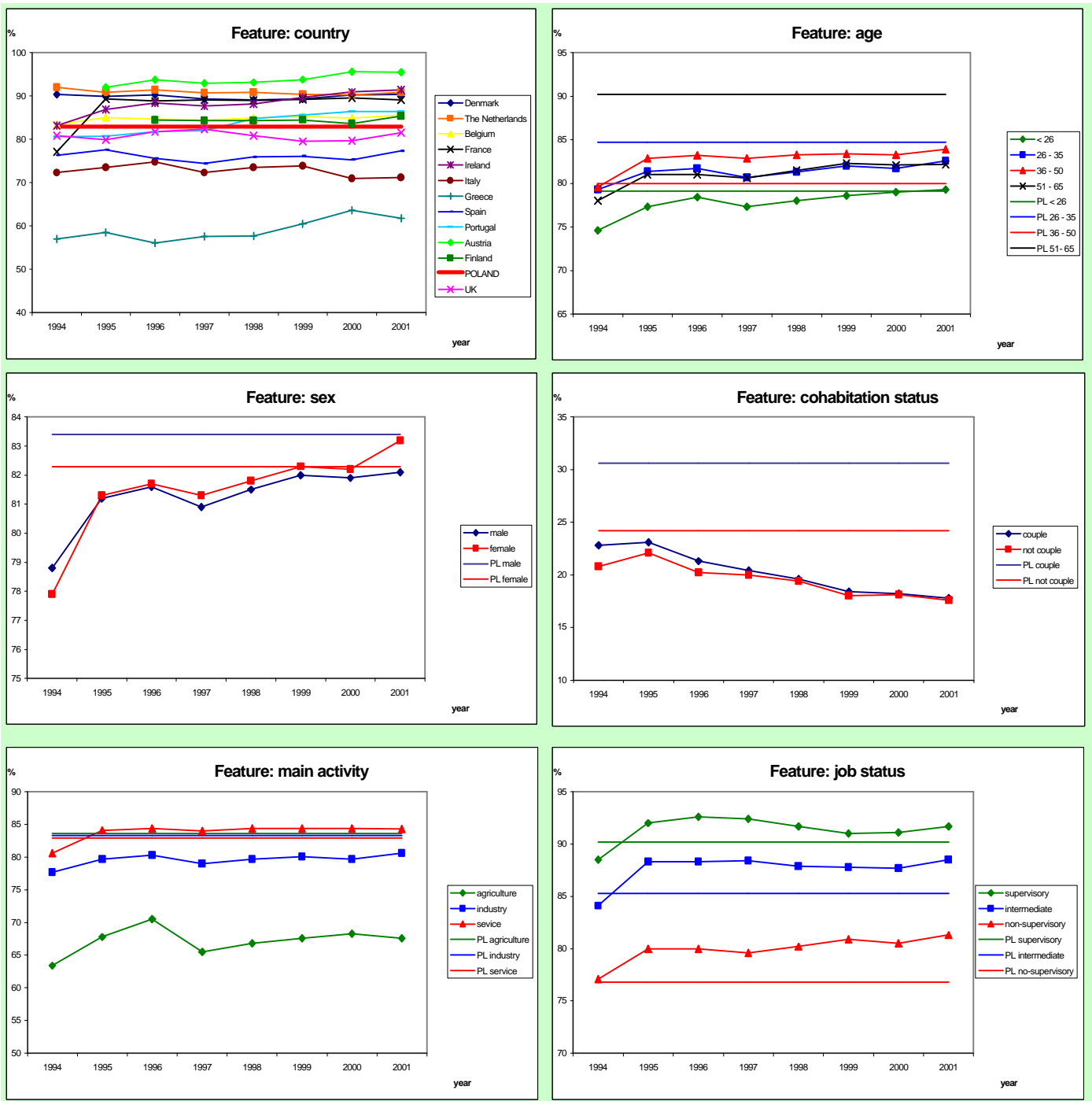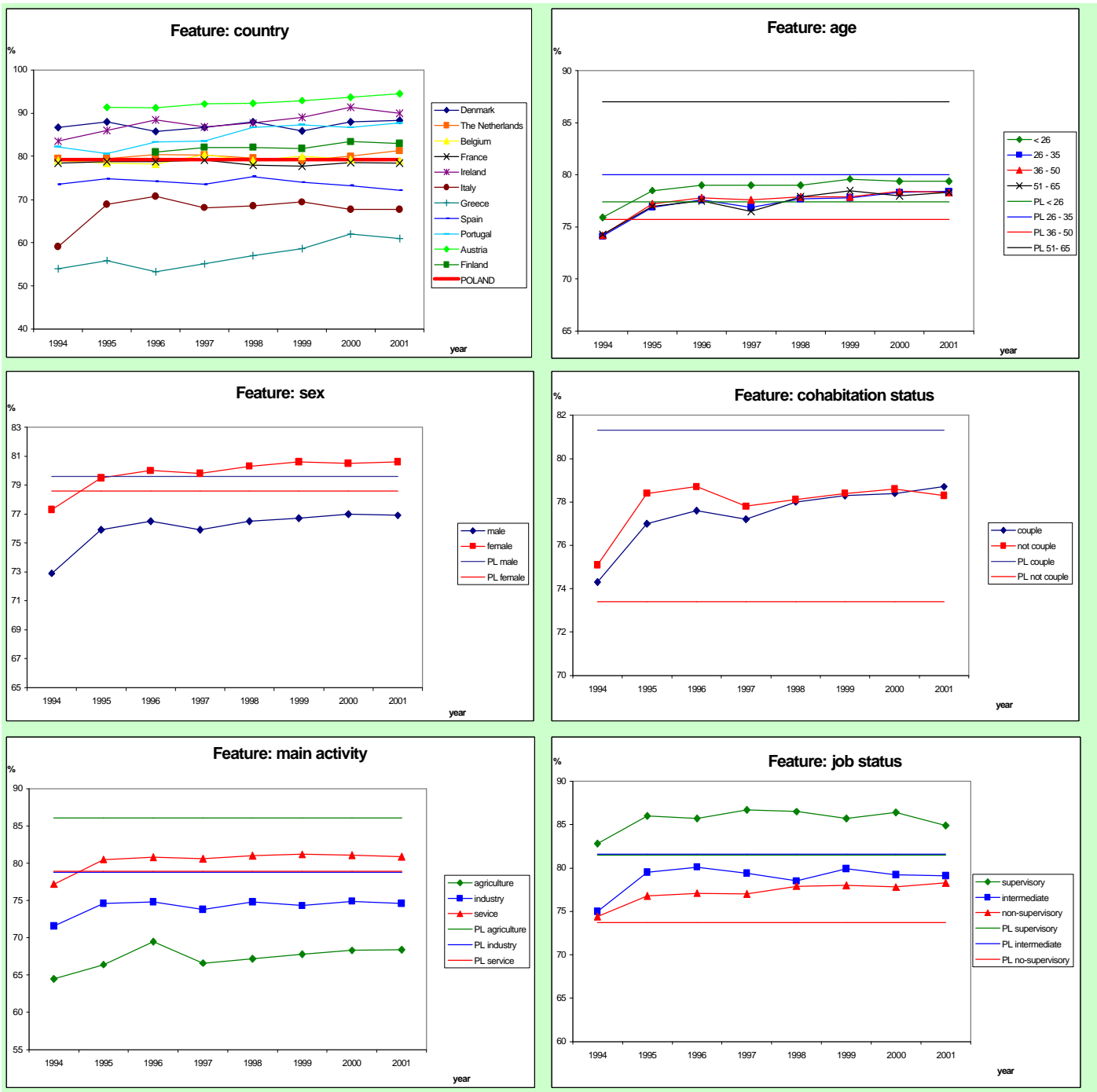
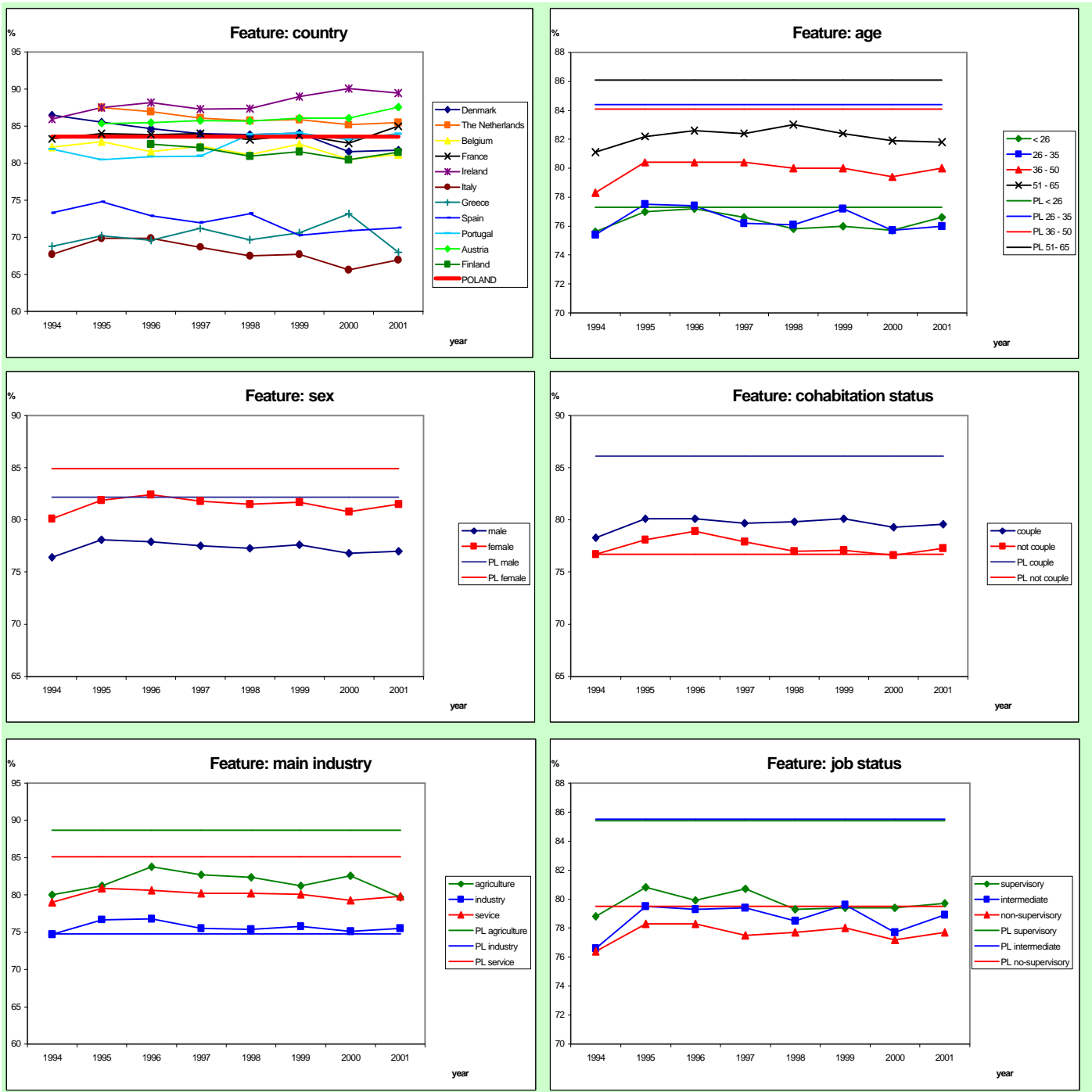Figure 8. Question: *How satisfied are you with your present job in terms of distance to job/commuting?* Answer YES – results analysis according with countries, demographic and professional features.

Results analysis – satisfaction in terms of distance to job: analysis based on age shows for both samples the lowest level of satisfaction for the youngest group and the highest level for group 51 – 65 years of age.

4. Job qualifications and job satisfaction. Classification approach

People employed while being surveyed were included into the study. They gave responses to questions concerning job qualifications and job satisfaction (with earnings, job security, and type of work). The consequent maps present responses from ECHP base in 2000 to selected questions. The numbers in brackets describe the number of objects in a given section of the study.

1. Question concerning satisfaction with earnings, answer: yes.

The nationality–wise analysis of respondents has pointed to conspicuous international differences as far satisfaction with earnings is concerned. What has been noted, among others, is that people from the Mediterranean countries (Greece, Spain, Italy, and Portugal) are far less frequently satisfied with their current earnings than respondents from the other countries. Among respondents from the Netherlands and Denmark, in turn, the greatest number of people satisfied with their earnings has been noticed.
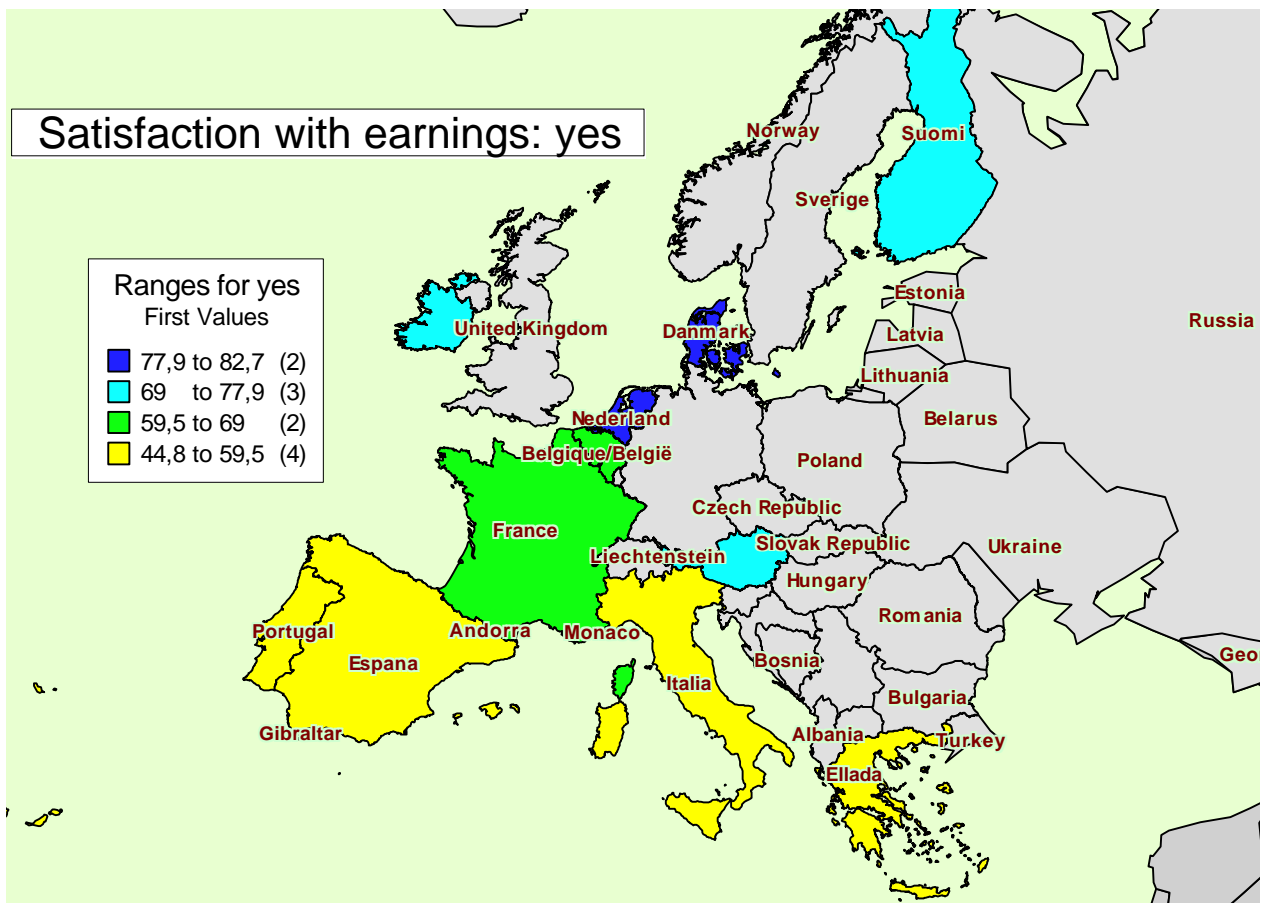
Picture2. Level of satisfaction with earnings in EU countries
Source: own computation.

2. Question concerning qualifications necessary to perform current type of work, answer: YES.

The unfavourable situation as far as job qualifications are concerned may be seen mainly in Portugal and Italy, where almost half of respondents perform their jobs without having a proper job training/education. The high percentages of people that do have the right professional qualifications were identified in the Netherlands, Denmark, Austria and Finland. What needs to be emphasized at this point is that in The Netherlands 100 % of respondents have declared to have the right job qualifications, which may raise doubts about the credibility of their responses.
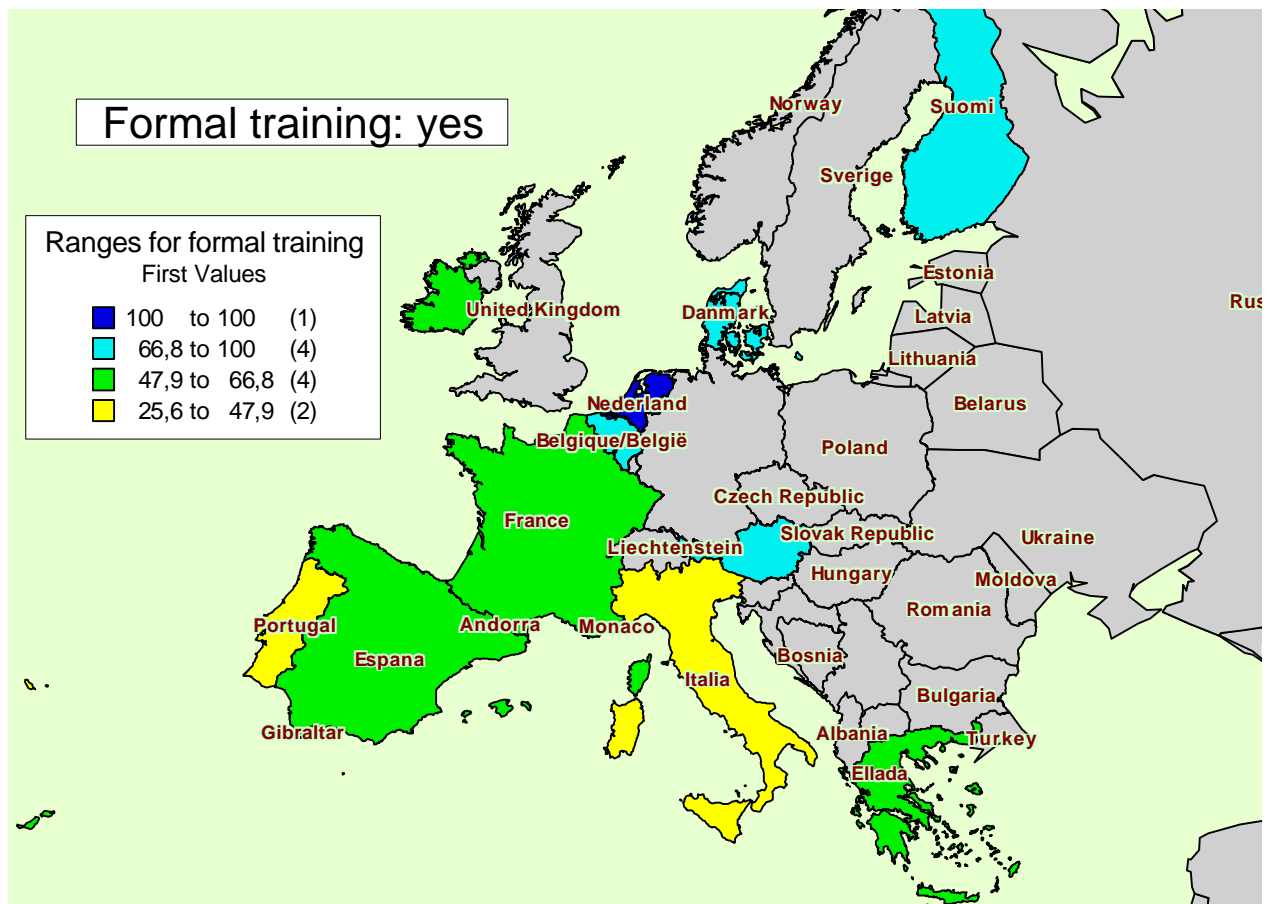
Picture 3. Level of qualifications necessary to perform current type of work in EU countries
Source: own computation.

3. Question concerning having the right skills to perform a more demanding job, answer: NO.

For analysis of answers to this question, it has been assumed that the advantageous answer is "no", which, in a sense, shows that the respondents are performing a job that suits them. Therefore, they do not feel the need to have a more demanding job. This is inference is correct

– if the given respondent does have the right job qualifications, i.e. she/he have answered "yes" to the previous question.

Among the analyzed countries, the greatest number of "no" answers have been noted in the Netherlands and Portugal. In the case of The Netherlands, this situation may unequivocally be taken as advantageous given the job qualifications of the Dutch respondents. Quite to the contrary, in Portugal, most of the people surveyed do not declare having the right skills to perform a more demanding job, but simultaneously, the same respondents have evaluated their qualifications to carry out their current jobs as inadequate.
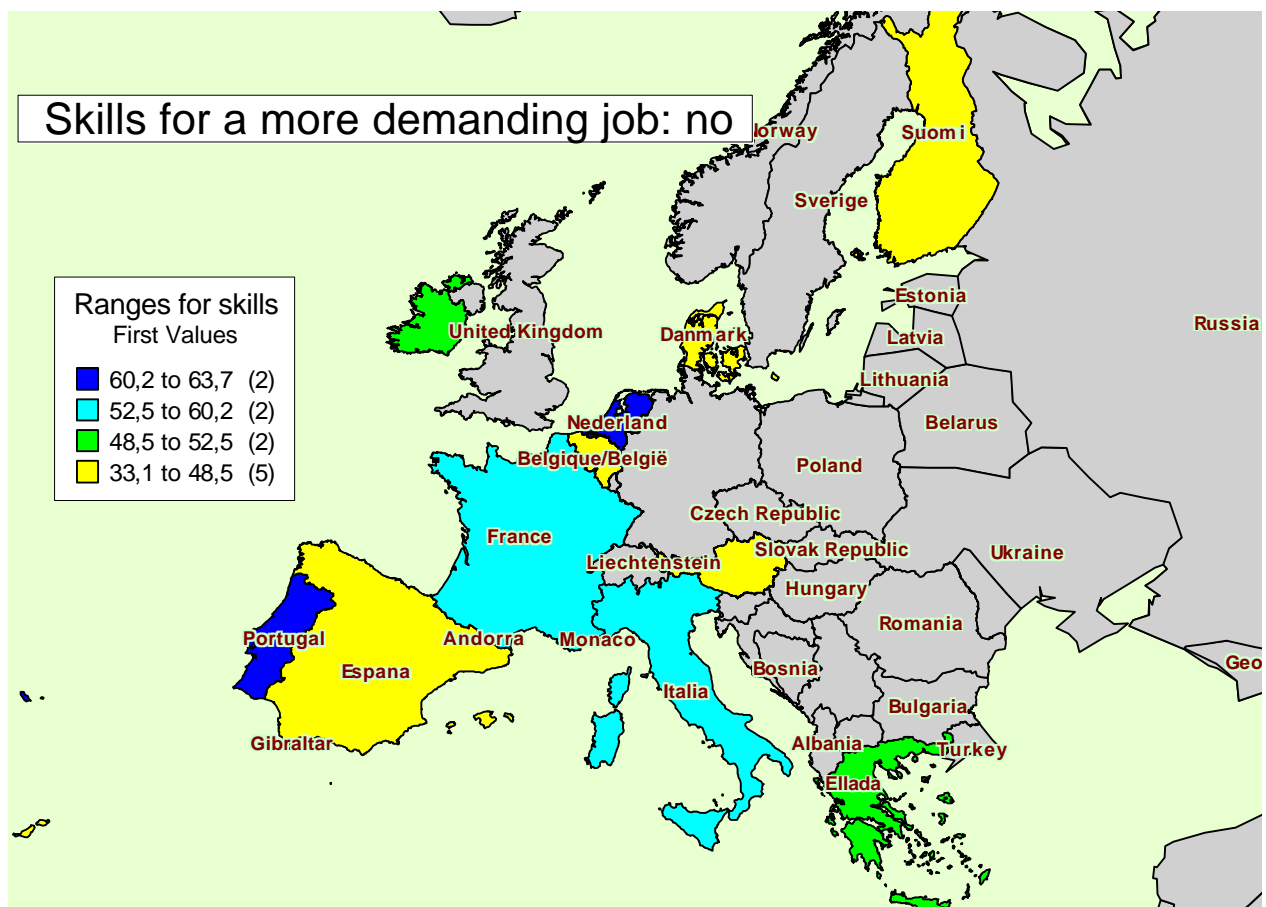
Picture 4. Level of respondents share, who declare they are having the right skills to perform a more demanding in EU countries.
Source: own computation. Source: own computation.

The further analysis was conducted for those respondents from both samples, who gave responses to questions concerning job qualifications and job satisfaction (with earnings, job security, and type of work) – sample quantity 43 411 respondents. For achieved the main goal of this analysis (Are there homogenous groups of respondents in the field of job qualifications and job satisfaction perception) the following questions were used:

1. *Do you feel that you have skills or qualifications to do a more demanding job than the one you have now?*

2. *Have you had formal training or education that has given you skills needed for your present type of work?*

3. *How satisfied are you with your present job in terms of earnings?*

4. *How satisfied are you with your present job in terms of job security?*

5. *How satisfied are you with your present job in terms of type of work?*

For transparency of the analysis for questions concerning job satisfaction answers were aggregated to two options: not satisfied; satisfied.

For classification, the **TwoStep Clustering** algorithm (with automatically determined number of clusters, clustering criterion Schwarz's Bayesian, SPSS version 12.0) was used. The choice of the technique is supported by the fact that it can work with very large datasets. This algorithm can handle continuous, ordinal and categorical variables and/or attributes. As a result five clusters have been identified. The resulted structure is presented in Table 3. The study of the variables has shown that the differentiating properties – the used test was based on χ^2 statistics with significance level $\alpha = 0,05$ – had all variables in the analyzed group.

Table 3. Cluster distribution

Cluster	Frequency	Share
1	7167	16,4%
2	7282	16,7%
3	11641	26,7%
4	7520	17,3%
5	9980	22,9%
Total	43590	100,0%

Source: own computation

The Figure 12 presents the characteristics of distinguished clusters taking into account advantageous/disadvantageous variants of answers given by respondents in particular questions (answer NO for question: *Do you feel that you have skills or qualifications to do a more demanding job than the one you have now*? And answer YES for other questions). The analysis of the Figure allows for characterizing the respondents classified into particular clusters:

— **Cluster 1** encompasses only those respondents who have chosen advantageous variants of answers to particular questions. These are respondents who are satisfied with all job satisfaction aspects taken into account here, and who are performing the right job, i.e. respondents having the right job qualifications and not feeling the need to have a more demanding job.

— In **Cluster 2** there are people who are satisfied with all the aspects of job satisfaction taken into account here, but who feel capable of performing a more demanding job.

— **Cluster 3** is dominated by people who are dissatisfied with the analyzed aspects of job satisfaction; all people not having satisfaction with type of work, together with over 80% of respondents dissatisfied with job security.

— In **Cluster 4** all respondents feel satisfied with their earnings, job security and the type of work performed, at the same time declaring their lack of qualifications to perform their current job.

— In **Cluster 5** all respondents are satisfied with having the job security and with the type of job they perform, at the same time being dissatisfied with the earnings.

Summarizing one can say that by using clustering methods it was possible to distinguish five almost homogeneous clusters. The *best* cluster is cluster 1, where all people are performing the right job, i.e. respondents having the right job qualifications and not feeling the need to have a more demanding job and they are satisfied with all type of analyzed fields of satisfaction. As opposite is cluster 3, where respondents who are rather not satisfied with any aspects of analyzed sources of job satisfaction.

Figure 13 presents the percentage of respondents from particular countries who have qualified themselves to particular cluster. Deviation from the expected share of respondents from these countries has been illustrated. It has been assumed that the expected share of respondents in a cluster should correspond (be proportional) to the number of respondents in this cluster. The situation where the share of people from a given country in a cluster is higher than the expected one has been labelled as an overrepresentation, whereas the reverse situation – as an underrepresentation. For the *best* cluster 1 one can observe a strong overrepresentation of the Dutch respondents. Representations of Ireland, Finland and Austria have also exceeded the expected share. What is also noticeable is the strong underrepresentation of the Mediterranean countries: Portugal, Greece, Spain, and Italy. Also respondents from Wroclaw Agglomeration are underrepresented here. In the *worst* cluster 3 mainly respondents from Spain, Italy and Greece and Wroclaw Agglomeration are overrepresented; well below the expected share are the Dutch, Danes, the Irish and the Austrians.

The analysis of responses when respondents' nationalities were taken into account has pointed to clear–cut differences between nations as far as job satisfaction is concerned. It has been noted, among others, that people from the Mediterranean countries (Greece, Spain, and Italy) are far more frequently dissatisfied with their current job situation than respondents from

other countries. Similar phenomenon may be seen for respondents from Wroclaw Agglomeration.

The Dutch, in turn, show the highest percentage of respondents fully satisfied with their current job situation. The observations point to a varying efficiency of the labor market policy instruments employed in the analyzed countries. On the other hand, they confirm to a large extent, observations made when analyzing the quantitative statistical data. The previous deliberations allow for selecting potential countries, which can be taken as the model ones (best European practice) as far as labor market policy that guarantees job satisfaction of the employees is concerned. The Netherlands is the key country here.

Figure 12. Clusters' characteristics.
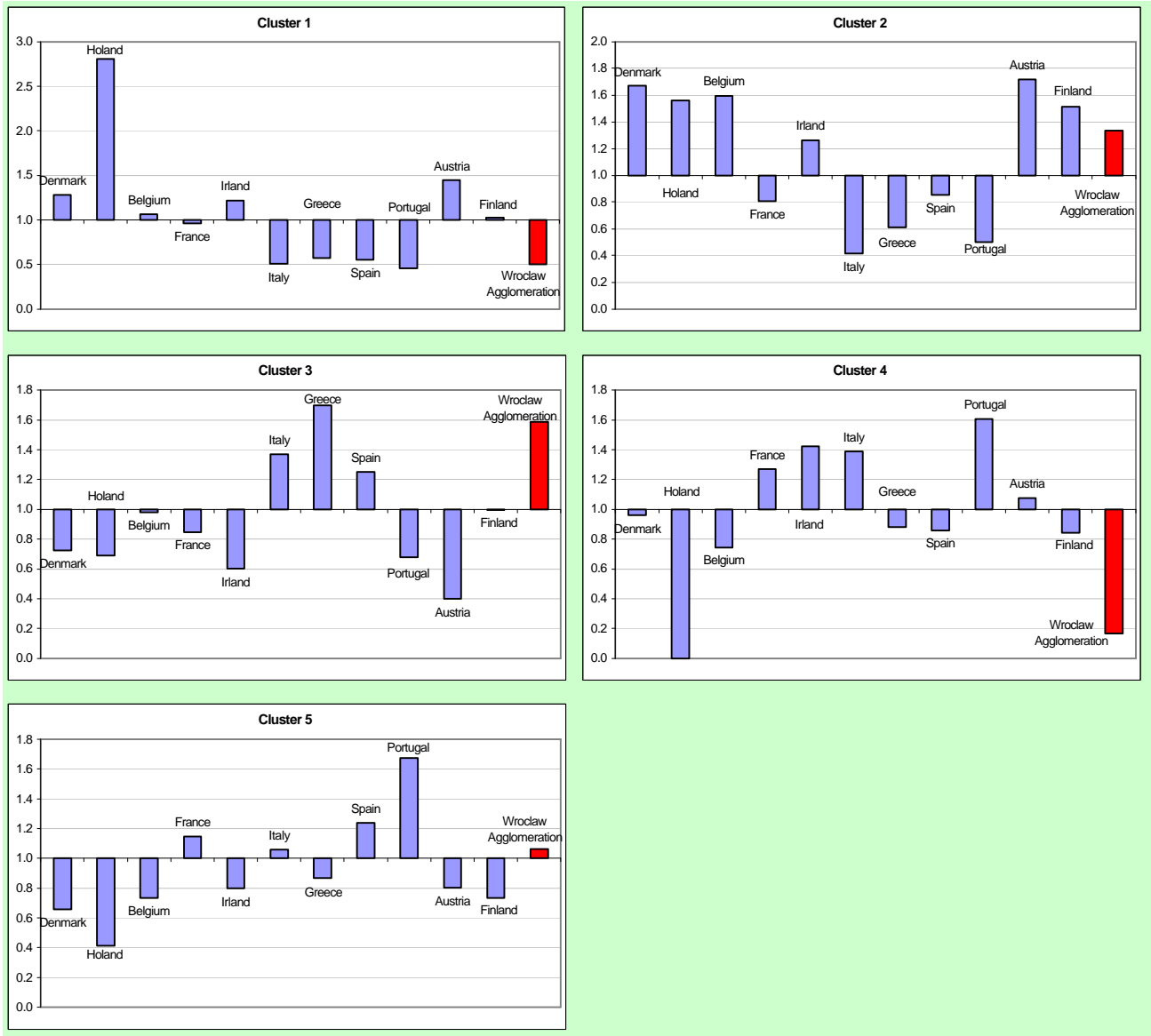
Figure 13. Overrepresentation and underrepresentation of respondents in particular cluster; feature: COUNTRY.

5. Logistic regression models

Logit models for job satisfaction. To identify the main demographic and professional factors (characteristics) which influence the respondents' job satisfaction level, logit models have been employed. Models were built separately for sample from ECHP and for respondents from Wroclaw Agglomeration. The dependent variables (Y) in particular models are the respondents' answers to questions concerning the three, analyzed earlier aspects of job satisfaction (satisfaction with earnings, job security, type of work). Answers were aggregated into two options: not satisfied; satisfied.

The following system of coding the states of these variables has been used:

1 – respondents is satisfied,
0 – respondent is not satisfied.

The potential independent variables are presented in table 4. Additionally, two metrical variables PD003 Age and PE039 Age of starting first job were used.

Table 4. Independent variables with categorical values for Logit Regression model of job satisfaction

No	Question	Label	Options of answer	Code
1	PD004	Sex	Male Female	1 0
2	PD008	Cohabitation status	Couple Not a couple	1 0
3	PE014	Existence of an unemployment period before current job	Yes No	1 0
4	PE016	Have skills for a more demanding job?	Yes No	1 0
5	PE021	Receive formal training	Yes No	1 0
6	PE024	Type of contract	Permanent employment Other type	1 0
7	PJ001	Person has worked before	Worked before First job	1 0

Source: Based on ECHP description.

The general form of estimated logit regression models has been the following:

$$L_i = \ln\left(\frac{p_i}{1-p_i}\right) = B_0 + B_1 x_{1i} + \ldots + B_k x_{ki}$$

where:

L_i – logit for i–th value (y_i) of explained variable Y,

p_i – probability of occurrence of i–th value of variable Y.

For the parameters estimation the *Logistic Regression* module of the SPSS program has been used. The adopted procedure: *forward with maximum likelihood*. Table 5 presents the parameters and selected statistics of the achieved models for sample from ECHP. Explanatory variables have been given in accordance with the order of their introducing to particular models, i.e. starting with factors most significantly influencing the level of job satisfaction. All parameters of the models were significantly different from zero remaining on the level $\alpha < 0,01$ (cf. Wald's statistics), so all the introduced variables significantly influence the state of the explained variables.

Table 5. Logit Regression model characteristics – ECHP sample

Satisfaction with earnings						
Sample size: 23 144 respondents				Percentage correct: 88,0%		
Question	Explanation	B	s(B)	Wald's Statistics	Sig.	Exp(B)
PE021	Receive formal training	,830	,028	850,128	,000	2,293
PE014	Existence of an unemployment period before current job	–,453	,030	232,685	,000	,636
PE024	Type of contract	,391	,036	119,395	,000	1,478
PE016	Have skills for a more demanding job?	–,234	,028	67,859	,000	,792
PD008	Cohabitation status	,124	,031	16,334	,000	1,132
Constant		–,062	,043	2,052	,152	,940
Satisfaction with job security						
Sample size: 23 144 respondent				Percentage correct: 92,9%		
Question	Explanation	B	s(B)	Wald's Statistics	Sig.	Exp(B)
PE024	Type of contract	1,868	,038	2464,998	,000	6,473
PE021	Receive formal training	,562	,035	253,805	,000	1,753
PE014	Existence of an unemployment period before current job	–,455	,036	162,035	,000	,635
PE016	Have skills for a more demanding job?	–,149	,035	18,162	,000	,862
PE039	Age of starting first job	–,010	,003	11,192	,001	,990
PD004	Sex	–,076	,035	4,625	,032	0,927
Constant		,074	,077	0,919	,338	1,077
Satisfaction with type of work						
Sample size: 23 144 respondent				Percentage correct: 83,0%		
Question	Explanation	B	s(B)	Wald's Statistics	Sig.	Exp(B)
PE021	Receive formal training	,863	,038	517,364	,000	2,370
PE024	Type of contract	,647	,042	235,133	,000	1,910
PE014	Existence of an unemployment period before current job	–,379	,038	100,766	,000	,685
PE016	Have skills for a more demanding job?	–,338	,037	81,784	,000	,713
PD008	Cohabitation status	,190	,039	23,848	,000	1,209
PE039	Age of starting first job	–,010	,003	9,038	,003	,990
PD004	Sex	–,112	,037	9,346	,002	,894
Constant		,986	,081	148,117	,000	2,681

Source: own computation.

Table 6 presents the parameters and selected statistics of the achieved models for sample from Wroclaw Agglomeration. Explanatory variables have been given in accordance with the order of their introducing to particular models, i.e. starting with factors most significantly influencing the level of job satisfaction. All parameters of the models were significantly different from zero remaining on the level $\alpha < 0,01$ (cf. Wald's statistics), so all the introduced variables significantly influence the state of the explained variables.

Table 6. Logit Regression model characteristics – Wroclaw Agglomeration sample

Satisfaction with earnings						
Sample size: 1190 respondents				Percentig corret: 59,0%		
Question	Explanation	B	s(B)	Wald's Statistics	Sig.	Exp(B)
PD003	Age	–,030	,006	26,605	,000	0,971
PD004	Sex	,425	,122	12,207	,000	1,529
PE014	Existence of an unemployment period before current job	–,400	,131	9,326	,002	0,670
PJ001	Person has worked before	,427	,144	8,846	,003	1,533
PE039	Age of starting first job	,051	,020	6,534	,011	1,052
Constant		–,387	,500	0,597	,440	0,679
Satisfaction with job security						
Sample size: 1190 respondents				Percentig correct: 63,6%		
Question	Explanation	B	s(B)	Wald's Statistics	Sig.	Exp(B)
PE024	Type of contract	0,592	,149	15,871	,000	1,808
Constant		,087	,132	0,435	,510	1,091
Satisfaction with type of work						
Sample size: 1190 respondents				Percentig correct: 83,1%		
Question	Explanation	B	s(B)	Wald's Statistics	Sig.	Exp(B)
PE021	Receive formal training	,964	,206	21,828	,000	2,621
PE024	Type of contract	,509	,182	7,842	,005	1,663
PE039	Age of starting first job	,054	,027	4,061	,044	1,055
Constant		–,696	,566	1,514	,219	0,498

Source: own computation.

MAIN CONCLUSIONS:

For satisfaction with earnings:

— There are significant differences in reason influences on satisfaction with earnings in both samples.

— For sample from Wroclaw Agglomeration most important are demographic features, especially sex and age of respondents. There are no professional features in the model.

— For sample from ECHP base the most significant factor influencing satisfaction with work is having the right job qualifications. People declaring to have the right job qualifications are twice more often satisfied with their earnings than people lacking these qualifications. In the case of respondents who had been unemployed before taking up their current jobs the probability of their being satisfied with the earnings is 40 % lower than in the case of people who had not been unemployed earlier. Satisfaction with earnings is far more common among people who have a regular job and who do not declare having skills to per-

form a more demanding job. There is almost a 13% more chance of satisfaction with earning in the case of respondents who are living in regular relationships.

For satisfaction with job security:

— According with expectation in both samples the most important factor influencing on satisfaction with job was type of contract.

— For sample from Wroclaw Agglomeration type of contract was single variable in the model.

— For sample from ECHP, the following variables have a significant influence on satisfaction perception with job security:

  o being unemployed before taking up the current job (people who had been unemployed earlier feel secure about their jobs half less often),

  o having the right job qualifications (the probability of being satisfied due to job security is 70 % higher among people who declare to have the job qualifications than among those who lack them).

For satisfaction with type of work:

— For both samples satisfaction with type of work depend mainly, on having the right job qualifications. Respondents having education / training indispensable for performing their current jobs declare to be satisfied with the type of work twice more. Next factor is type of contract. People having regular job perform the type of work which brings the satisfaction almost twice more often.

Logit models for looking for job. For identification of the most important factors, influencing decision that respondent is looking for job – logit models were built for sample from Wroclaw Agglomeration.

As dependent variables (Y), respondents' answers to the question concerning situation whether or not they were looking for job (other or additional) were used. The following system of coding the states of these variables has been used: 1 – respondents is looking for job, 0 – respondent is not looking for job. The potential independent variables are presented in table 7. Also were used two metrical variables PD003 Age and PE039 Age of starting first job.

Table 7. Independent variables with categorical values for Logit Regression model for looking for job

No	Question	Label	Options of answer	Code
1	PD004	Sex	Male	1
			Female	0
2	PD008	Cohabitation status	Couple	1
			Not a couple	0
3	PE014	Existence of an unemployment period before current job	Yes	1
			No	0
4	PE016	Have skills for a more demanding job?	Yes	1
			No	0
5	PE021	Receive formal training	Yes	1
			No	0
6	PE024	Type of contract	Permanent employment	1
			Other type	0
7	PE031	Satisfaction with earnings	Yes	1
			No	0
8	PE032	Satisfaction with job security	Yes	1
			No	0
9	PE033	Satisfaction with type of work	Yes	1
			No	0
10	PE036	Satisfaction with working condi-tion/environment	Yes	1
			No	0
11	PE037	Satisfaction with distance to job/commuting	Yes	1
			No	0
12	HG017	Place of residence: larger town	Yes	1
			No	0
13	PE037	Satisfaction with distance to job/commuting	Yes	1
			No	0
14	PJ001	Person has worked before	Worked before	1
			First job	0

Source: Based on ECHP description.

The general form of estimated logit regression models has been the following:

$$L_i = \ln\left(\frac{p_i}{1 - p_i}\right) = B_0 + B_1 x_{1i} + ... + B_k x_{ki}$$

where:

L_i – logit for i–th value (y_i) of explained variable Y,

p_i – probability of occurrence of i–th value of variable Y.

For estimation of the parameters the *Logistic Regression* module of the SPSS program: *method forward* with maximum likelihood was used. Explanatory variables have been given in accordance with the order of their introducing to particular models, i.e. starting with factors most significantly influencing the level of job satisfaction. All parameters of the models were significantly different from zero remaining on the level $\alpha < 0,01$ (cf. Wald's statistics), so all the introduced variables significantly influence the state of the explained variables. Table 8 presents characteristic of model.

Table 8. Logit Regression model characteristics – Wroclaw Agglomeration sample

Looking for job						
Sample size: 1179 respondent Percentage correct: 77,4%						
Question	Explanation	B	s(B)	Wald's Statistics	Sig.	Exp(B)
PE032	Satisfaction with job security	–,651	,152	18,429	,000	,521
PD003	Age	–,041	,007	30,131	,000	,960
PE031	Satisfaction with earnings	–,911	,160	32,581	,000	,402
PJ001	Person has worked before	,555	,184	9,083	,003	1,743
HG017	Place of residence: larger town	,521	,156	11,192	,001	1,684
PE016	Have skills for a more demanding job?	,646	,177	13,319	,000	1,909
PE024	Type of contract	–,620	,176	12,467	,000	0,538
Constant		,433	,354	1,496	,221	1,541

Source: own computation.

Main conclusions after results analysis:

— The most important factor influencing decision about job looking is satisfaction with job security and satisfaction with earnings. Almost twice often people not satisfied declare looking for other job. Often are looking for job respondent who is younger and from big town, who worked before in another place and has skills for a more demanding job.

6. Conclusion

What has been taken under analysis here are subjective evaluations concerning job satisfaction of the ECHP database respondents and respondents from Wroclaw Agglomeration. The object of the study was, on the one hand, the analysis of job satisfaction among people from various EU countries, and on the other hand, identification of main factors influencing the level of job satisfaction. The results lead to the following conclusions:

1. There are significant differences in job satisfaction level between people from different countries of the *old* EU. Observations made on the basis of subjective evaluations of employees confirm results achieved on the basis of quantity statistical data – less favorable opinions about the labor market policy on the international arena are matched by greater dissatisfaction of respondents as far as satisfaction with their job situation is concerned.

2. The main factor deciding about the level of job satisfaction is the right job qualifications (education / training), which, on the one hand, has direct influence on satisfaction with the type of work, and on the other hand, it increases the chances for regular employment and better earnings, and thus has indirect influence on satisfaction with earnings and job security.

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