# Job Related Satisfaction in Poland and *Old* EU Countries. Cross-national Comparison<sup>1</sup>

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#### **1.** The goal of the study and the scope of the research

The topic of the paper is analysis of the subjective evaluation of job related satisfaction perception by respondents from Poland and *old* EU countries. The object of the study is, on one hand, the analysis of job satisfaction perception among people from selected EU countries, and on the other hand, identification of main factors influencing the level of job satisfaction. To identify the main demographic and professional factors (characteristics) which influence the respondents' job satisfaction level, logit models will be used.

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<sup>2</sup>: 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 perception, de-

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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.

Country										
Denmark	Holla	nd	Belgium	France	Ireland	Italy	G	freece	Spain	
3,8	7,6		3,6	8,0	3,3	9,5		6,5	8,2	
Portugal	Austr	ia	Finland	Sweden	Germany	Luxemb	ourg	UK	Total	
9,4	4,6		5,3	9,0	9,4	4,1		7,8	100	
				A	ge					
<= 25			26–35	36–50		51-	51-65		> 65	
14,6			25,0	3	9,6	19	19,8		1,0	
		S	ex			Coha	abitation s	tatus		
ma	ale		fen	nale	couple			not couple		
57	',3		42	2.7	73,8			26,2		
				Main	activity					
agriculture i				ind	ustry			services		
7,0				2	28,1 64,9					
				Job	status					
S	uperviso	ry		intern	nediate	e non-supervisory				
11,8				1.	5,3 72,9			•		
	Village or town									
village small or midd				lle–sized town larger town						
38,5			2	26,6 34,9						
Household with dependent children										
no				yes						
48,3				51,7						

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

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

Age							
<= 25	26-35	36–5	0	51-65		> 65	
11,5	30,3	38,8	3	19,1 0,3		0,3	
Sex			Cohabitation status				
Male	femal	e	(	couple		not couple	
49,3	50,7			72,7		27,3	
		Main ac	tivity				
agricultur	e	industry		services			
6,6		16,6			76,8		
		Job sta	atus				
supervisor	y .	intermediate			non-s	supervisory	
8,6		59,4		31,9			
		Village of	r town				
village	SI	small or middle-sized town		vn	larger town		
22,4		17,6 60,1		60,1			
Household with dependent children							
no			yes				
	39,3		60,7				

## 2. Dynamic analysis of job satisfaction

Five question concerning job satisfaction were analyzed:

- How satisfied are you with your present job in terms of earnings? not at all (?) <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup>

- 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 1 - 5. 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 1. 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 sub-populations – 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 2. 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 3. 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 4. 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 5. 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.

## 3. 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.



Picture 2. 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.

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  $\chi^2$  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 6 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 7 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 6. Clusters' characteristics.



Figure 7. Overrepresentation and underrepresentation of respondents in particular cluster; feature: COUNTRY.

## 4. Logistic regression models

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.

No	Question	Label	Options of answer	Code
1	PD004	Sex	Male Female	1
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

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

Source: Based on ECHP description.

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

$$L_{i} = \ln\left(\frac{p_{i}}{1-p_{i}}\right) = B_{0} + B_{1}x_{1i} + \dots + B_{k}x_{ki}$$

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.

Satisfaction with earnings								
Sample size: 23 144 respondentsPercentage correct: 88,0%								
Question	Explanation	В	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	Perc	centage c	orrect: 92,9%				
Question	Explanation	В	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 wi	th type o	f work					
	Sample size: 23 144 respondent	Pe	rcentage	correct: 83,0%	0			
Question	Explanation	В	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		

Table 5. Logit Regression model characteristics – ECHP sample

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.

Satisfaction with earnings								
Sample	size: 1190 respondents	Percentage correct: 59,0%						
Question	Explanation	В	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	ze: 1190 respondents	Percentage correct: 63,6%						
Question	Explanation	В	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	th type o	f work					
Sample size	ze: 1190 respondents	Percentage correct: 83,1%						
Question	Explanation	В	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		

Table 6. Logit Regression model characteristics - Wroclaw Agglomeration sample

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

#### 5. 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.

security.

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