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IDENTIFICATION OF CAUSES FOR OUTFLOW FROM UNEMPLOYMENT DEREGISTERING ON THE LOCAL LABOUR MARKET

Abstract. The article is set in the realistic background of the local labor market. The topic taken up herein concerns the stream analysis of unemployment. The drain of the unemployed from the stock is analyzed from the causality viewpoint. Based on individual data regarding the unemployed from the area of the District Job Center in Pabianice those ontogenetic characteristics of the unemployed are identified that in a statistically significant manner influence the deregistering process. Thanks to using methods of logistic regression and multifactorial variance analysis that are further supported by professional statistic software (SPSS v.14.0) the reader will learn how and under the influence of which demo-social factors chances and dangers of deregistering develop on the local labour market.

Key words: local labour market, unemployment, stream analysis, logistic regression, multifactorial variance analysis

1. INTRODUCTION

The demo-social characteristics of the unemployed that are to shape the unemployment level and structure change seem to have been sufficiently identified. The classic characteristics are sex, age and education level. These determinants significantly influence the flow of the unemployed between labour market resources, these resources being the employed (working) and the professionally passive. The aforementioned streams are simple level regulators of all labour market resources.

The results of unemployment stream analyses deliver information on the amount and intensity of outflow and inflow streams into the resource. The knowledge of these is the more valuable, the more they are disaggregated according to certain usability criteria, such as ontogenetic unemployed characteristics. This calls for the necessity of accessing individual data on the unemployed described by their characteristics from a random area subjected to the analysis.

This condition is fulfilled by the unemployed register from the area of the District Job Center in Pabianice from the first half-year of 2006. Initially, for

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each person recorded at the job center within each month the following data are known: date of birth, date of registration, date of deregistration if it has occurred, sex, education level, seniority, marital status, place of residence (city/commune) and practiced profession.

Based on the date of birth the age of the unemployed has been determined, and based on the second and third entry – the time the person remains in the unemployed resource. Data regarding the registration and deregistration of the unemployed from the resource served additionally to identify his status. This characteristic plays a key role in the regression model which purpose is the identification of the significance of the reasons for unemployment deregistering. The status of the unemployed is an endogenic variable which value of 1 means success [(i.e. deregistration), that is a person who was unemployed] or failure for the value of 0 [(i.e. remaining in the resource), that is a person who still is unemployed].

Other pieces of information are demographical and social characteristics of the unemployed. Thus, in original, the education level entails 9 categories, namely: higher, postsecondary, secondary vocational, 4-year secondary vocational, secondary, secondary vocational, middle school, primary or no education.

The marital status entails 12 categories: maiden, bachelor, single woman, single man, divorced woman, divorced man, woman in separation, man in separation, widow, widower, married woman or married man.

The seniority declared by the unemployed describes the precise working time. The format is: yymmdd (that is number of years, months and days of work).

The operational scope of the District Job Center in Pabianice includes two cities: Konstantynów, Pabianice and 5 communes: Dłutów, Dobroń, Ksawerów, Lutomiernik and the commune of Pabianice.

The previous profession declared by the unemployed is given in the form of a 6-digit code of the Classification of Professions and Specialties that is compatible with the ISCO-88 International Standard Classification of Occupations (Geneva 1987), and then its new 1994 edition ISCO-88 (COM)¹.

Practical examinations usually do not require analyzing the 6-digit Classification of Professions and Specialties. It is sufficient to base the considerations on the 1-digit classification transformed from the 6-digit code. This means that we only consider the first digit of the 6-digit code. By using this simple method we get 9 main (large) profession groups and armed forces that do not occur in the District Job Center in Pabianice. Names of the large (main) profession groups are given in Table 1.

¹ See attachment to the decree of the Minister of Labor and Social Policy from December 12, 2002 (entry 1868).

Table 1

Main profession groups of the Classification of Professions and Specialties

No.	Profession group according to CPS (ISCO-88)
1	LEGISLATORS, SENIOR OFFICIALS AND MANAGERS
2	SCIENCE, HEALTH AND TEACHING PROFESSIONALS
3	TECHNICIANS AND ASSOCIATE PROFESSIONALS
4	CLERKS
5	SERVICE WORKERS AND SHOP AND MARKET SALES WORKERS
6	SKILLED AGRICULTURAL AND FISHERY WORKERS
7	CRAFT AND RELATED TRADES WORKERS
8	PLANT AND MACHINE OPERATORS AND ASSEMBLERS
9	ELEMENTARY OCCUPATIONS
0	ARMED FORCES

Source: attachment to the decree of the Minister of Labor and Social Policy from December 8, 2004 („Law Gazette” no. 265, entry 2644)

The symbols scheme used in the Classification of Professions and Specialties (ISCO-88) is depicted by the following rule:

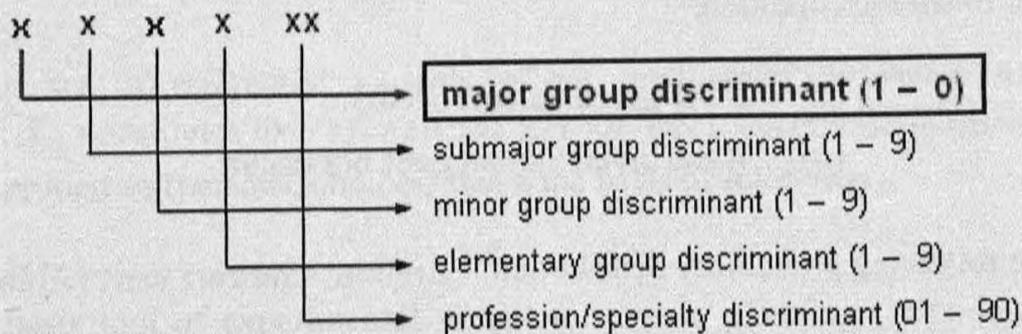


Diagram 1. Symbols for the groups of the Classification of Professions and Specialties

Source: K. Lelińska, M. Gruza, J. Stahl 2004, p. 21.

2. METHODOLOGY AND METHODOLOGICAL BASICS OF EMPIRICAL ANALYSES

Within the empirical examination presented below we are looking for answers to the following questions:

1° are the ontogenetic, demo-social characteristics of the unemployed statistically significant determinants of deregistration from resources on the local labour market?

2° do the specified demo-social determinant variants differentiate in a statistically significant manner the probability level means of unemployment deregistering?

3° does the profession of the unemployed differentiate in a statistically significant manner the probability level means of unemployment deregistering?

The formulated issues will be settled in turn by the *logistic regression* method and the *multifactorial variance analysis* method. The predicted, hypothetical probabilities of success obtained as result of using the logistic regression model will be subjected to variance analysis tests.

Logistic regression model

The causal *logit model* (A. Malarska 2007, pp. 110–113) is defined by the formula:

$$p_i = F(\beta_0 + \beta_1 X_1 + \dots + \beta_k X_k + \varepsilon) = \frac{e^{\beta_0 + \beta_1 X_1 + \dots + \beta_k X_k + \varepsilon}}{1 + e^{\beta_0 + \beta_1 X_1 + \dots + \beta_k X_k + \varepsilon}}, \quad (1)$$

where: X_1, \dots, X_k – exogenous variables, factors influencing the binary quality variable Y , so that its y_i realizations (Y variable value for the i^{th} object (person, choice)) fulfill the condition:

$$y_i = \begin{cases} 1, & \text{if the given variant occurs,} \\ 0, & \text{if the given variant does not occur,} \end{cases}$$

with the following probability distribution:

$$\begin{aligned} P\{y_i = 1\} &= p_i \\ P\{y_i = 0\} &= 1 - p_i \end{aligned} \quad (2)$$

$Y = f(X_1, \dots, X_k)$ therefore describes the expected Y variable values (i.e. $E(y_i) = p_i$, since $1 \cdot p_i + 0 \cdot (1 - p_i) = p_i$),

$\beta_0, \beta_1, \dots, \beta_k$ – model parameters,

ε – random element,

F – increasing function of the linear free term combination, the X_1, \dots, X_k variables and the random element, the type of which is determined by the model type.

After specifying the exogenous variables the task of the model in the form of (1) is the estimation of the β vector of the MNW-estimated structural parameters and the prognosis of the p_i value.

Among all structural characteristics of the logit model the largest significance is attributed to the individual *odds ratio* – OR_i in the form of:

$$OR_i = \frac{p_i}{1-p_i} = e^{\beta_0 + \sum_{i=1}^k \beta_i X_i} \quad (3)$$

For exogenous quantitative variables the odds ratio expresses the predicted, individual change of the dependent variable taking place under the influence of the individual increment of the X factor, i.e. if the value of Y changes and the value of the measurable factor increases by the unit.

For exogenous *qualitative variables* the odds ratio means a percentage advantage ($OR_i > 1$) or deficiency ($OR_i < 1$) of the chances of success for the i^{th} variable variant (factor) X in relation to the reference variant of this variable. The reference variant of each variable is called *referential*. Relative to the referential variant, by means of the odds ratio, a comparison is carried out of the influence of other variable variants on the level of the exogenous binary variable Y.

The set of referential variants of all qualitative exogenous variables X_1, \dots, X_k constitutes the *referential group* of characteristics describing the object properties (persons, choices) that a the basis of reference.

Multifactorial variance analysis

A basis tool of experimental statistics, statistic planning methods and the evaluation of scientific experiment results are *variance analysis tests* (ANOVA). Their use makes it possible to control the experiment by means of freely adjustable (controlled) factors during the experiment (Malarska 2005, pp. 171–205). The method of statistical inference, called by its creator, Ronald A. Fisher *variance analysis* „makes it possible to simultaneously compare a certain number of populations due to their position on the numeral characteristic axis” (Góralski 1974, p. 279). It is therefore widely used when evaluating the significance of differences between observed group means.

The set of verified *F-Fisher-Snedecor* test hypotheses for a linear, general, constant *variance analysis* model with g factors ($T \in [1, g]$) and interactions between the first factor and the remaining factors takes the following form:

a) for g factors ($T \in [1, g]$) with r variants:

$$\begin{cases} H_0: m_{T1} = m_{T2} = \dots = m_{Ti} \dots = m_{Tr} \\ H_1: \neg H_0 \quad (\text{tzn. } \exists i \neq l \in \langle 1, \dots, r \rangle \quad m_{Ti} \neq m_{Tl}) \end{cases}$$

which means that the α_T factor classification does not differentiate m_{Ti} ,

b) for $g-1$ interactions of factor α_1 with the remaining $\alpha_{T>1}$ in (r, k) variants:

$$\begin{cases} H_0: (\alpha_1 \alpha_{T>1})_{11} = (\alpha_1 \alpha_{T>1})_{12} = \dots = (\alpha_1 \alpha_{T>1})_{rk} \\ H_1: \neg H_0 \quad (\text{i.e. } \exists i \neq j \neq l \quad (i \in \langle 1, \dots, r \rangle; j, l \in \langle 1, \dots, k \rangle) \quad (\alpha_1 \alpha_{T>1})_{ij} \neq (\alpha_1 \alpha_{T>1})_{il}) \end{cases}$$

that is interactions of factor α_1 with the remaining $\alpha_{T>1}$ do not differentiate m_{Ti} ,

where: $(\alpha_1 \alpha_{T>1})_{ij}$ – interactions (mutual connections) between factor α_1 and the remaining $\alpha_{T>1}$ in (i, j) variants. Their valuations express the effects of special (untypical) factor combinations,

g – number of factors.

3. RESULTS OF THE EMPIRICAL ANALYSES OF UNEMPLOYMENT DEREGISTERING

At no time does the number of individuals in this experiment (13 712) correspond to the number of the unemployed in the unemployment register. It is an abstract quantity resulting from selecting recurring cases (persons) in available unemployment register at the end of the first six months of 2006.

As a consequence, the structure of the examined population is also abstract from the viewpoint of demo-social characteristics. Despite this fact, the observations resulting from the analysis of structures of the unemployed in accordance with demo-social characteristics with homogenous unemployed status (divided into registered and deregistered) are quite interesting. On this basis we can say that men with the following characteristics deregister from the unemployed resources more often than others: age maximum 39, with higher or secondary vocational education, seniority of maximum 10 years, bachelors and maidens,

inhabitants of Konstantynów, Pabianice and the commune of Dobroń, science, health (WG2), teaching professionals, as well as technicians and associate professionals (WG3).

3.1. Causal modeling – logistic regression

Factors of unemployment deregistering that were taken into account in the analysis are:

- 1) **sex** of the unemployed (man/woman),
- 2) **age** of the unemployed in the following variants:
 - a) precise number of years,
 - b) according to 10-year age groups, i.e.: up to 24, 25–34, 35–44, 45–54, 55–59, 60 +... years,
- 3) **education level** of the unemployed in accordance with the following classification:
 - higher education,
 - secondary and postsecondary,
 - secondary vocational,
 - middle school and below
- 4) **time of the unemployed remaining in the resource** (Dtu) in accordance with the following classification:
 - unemployed up to 1 month,
 - 2–3 months,
 - 4–6 months,
 - 7–12 months,
 - 12–24 months,
 - 25 months and more,
- 5) **seniority** of the unemployed in accordance with the following classification:
 - up to 1 year,
 - 1–5 years,
 - 5 and more years,
- 6) **marital status** of the unemployed in accordance with the following classification:
 - maiden/bachelor,
 - married man/woman,
 - single man/woman,
- 7) **residential area** of the unemployed in accordance with the following classification:
 - the city of Konstantynów,
 - the city of Pabianice,

– rural communes (Dłutów, Dobroń, Ksawerów, Lutomiersk and the commune of Pabianice),

8) **professional groups** of the unemployed in the following variants:

a) according to major professional groups (MPG) of the CPS classification, i.e.:

MPG.1. LEGISLATORS, SENIOR OFFICIALS AND MANAGERS,

MPG.2. SCIENCE, HEALTH AND TEACHING PROFESSIONALS,

MPG.3. TECHNICIANS AND ASSOCIATE PROFESSIONALS,

MPG.4. CLERKS,

MPG.5. SERVICE WORKERS AND SHOP AND MARKET SALES WORKERS,

MPG.6. SKILLED AGRICULTURAL AND FISHERY WORKERS,

MPG.7. CRAFT AND RELATED TRADES WORKERS,

MPG.8. PLANT AND MACHINE OPERATORS AND ASSEMBLERS,

MPG.9. ELEMENTARY OCCUPATIONS

b) combination of major profession groups, i.e.: MPG. 2 and 3, MPG. 5 – 9, MPG. 1 and 4

MPG.2. SCIENCE, HEALTH AND TEACHING PROFESSIONALS,

MPG.3. TECHNICIANS AND ASSOCIATE PROFESSIONALS,/

A consequence of the multi-variant approach to the age and profession of the unemployed are the following symbols and classification of the created logistic regression models:

Age variants	CPS variants	
	3a (MPG.10)	3b (MPG.3)
1a (L_years)	MOD_35	MOD_36
1b (kl_10)	MOD_37	MOD_38

Diagram 2. Classification of the empirical logistic regression models

Source: own analysis.

The estimation results of the logistic regression model represent 2 of the selected, differentially specified models, i.e.: MOD_35 and MOD_38. Details are given in Table 2.

Table 2

Numerical characteristics of the empirical logistic regression models

MOD_35	B	Wald	Signific.	Exp(B)	MOD_38	B	Wald	Signific.	Exp(B)
Men	0.343	47.8	0.000	1.409	Men	0.355	54.4	0.000	1.426
Age (in years)	-0.036	138.1	0.000	0.965	Age			0.000	
Ctb			0.000		up to 19	1.071	4.3	0.038	2.920
up to 1m.	0.916	70.5	0.000	2.500	20-24	1.101	5.9	0.015	3.006
2-3	1.430	308.8	0.000	4.179	25-29	0.971	4.7	0.031	2.641
4-6	0.697	79.3	0.000	2.008	30-34	0.804	3.2	0.073	2.236
7-12	0.603	64.1	0.000	1.827	35-39	0.665	2.2	0.140	1.944
13-24	0.421	27.9	0.000	1.523	40-44	0.359	0.6	0.426	1.433
Seniority			0.007		45-49	0.237	0.3	0.598	1.267
1-5	0.034	0.2	0.654	1.035	50-54	0.034	0.0	0.940	1.035
5+...	0.221	6.4	0.012	1.247	55-59	-0.073	0.0	0.873	0.930
Area			0.015		Ctb			0.000	
Konstantynów	0.230	8.3	0.004	1.259	up to 1m.	0.921	70.9	0.000	2.511
Pabianice	0.083	2.0	0.157	1.087	2-3	1.435	310.2	0.000	4.202
CPS			0.014		4-6	0.703	80.7	0.000	2.020
MPG.1	-0.169	1.3	0.247	0.844	7-12	0.605	64.8	0.000	1.832
MPG.2	0.239	5.6	0.018	1.270	13-24	0.421	27.9	0.000	1.524
MPG.3	0.146	2.6	0.106	1.158	Seniority			0.008	
MPG.4	-0.082	0.4	0.535	0.921	1-5	0.010	0.0	0.897	1.010
MPG.5	-0.034	0.1	0.728	0.966	5+...	0.204	5.1	0.024	1.227
MPG.6	0.237	1.6	0.206	1.267	Area			0.021	
MPG.7	0.142	3.7	0.055	1.153	Konstantynów	0.220	7.7	0.006	1.246
MPG.8	0.002	0.0	0.984	1.002	Pabianice	0.077	1.7	0.186	1.081
Fixed value	-1.114	41.8	0.000	0.328	Professional groups		9.6	0.008	
					MPG. 2 and 3	0.306	9.3	0.002	1.358
					MPG. 5 to 9	0.201	4.9	0.027	1.223
					Fixed value	-3.163	46.2	0.000	0.042

Source: own calculations in SPSS 14.0 based on data from the District Job Center in Pabianice.

Diagram 3 contains the differences in the definition of referential groups of two empirically analyzed regression models.

Due to different explanatory variable and referential group specification in the depicted models the results of common variable estimates differ. Even so the general regularities are the same.

Unemployed in the model:	
MOD_35	MOD_38
– male sex, – max. middle school education, – at least 2 years, – seniority up to 1 year, – single, – inhabitants of the countryside, – elementary worker	– male sex, – at least 60 years old, – max. middle school education, – at least 2 years, – seniority up to 1 year, – single, – inhabitants of the countryside, – legislators, senior officials, managers and office workers.

Diagram 3. Referential groups in the logistic regression models

Source: own analysis.

Generally we can say that from the viewpoint of the deregistering process from the unemployment resource in the area of the District Job Center in Pabianice the following persons have the best situation:

1° unemployed men, who have a 40.9% (42.9%) higher chance of deregistering than women,

2° persons that are unemployed for 2 to 3 months, who have a 4-times higher chance (by 317.9 % (320.2%)) of deregistering from the resource than persons unemployed for more than 2 years,

3° unemployed persons with a seniority of at least 5 years. With regard to persons with the shortest seniority (of maximum one year), their chance of deregistering is higher by 24.7% (22.7 %),

4° with regard to the living area variable only the Konstaktynow variant is statistically relevant. Based on the above we can say that unemployed inhabitants of Konstaktynow have a 25.9% (24.6%) higher chance of deregistering from the resource than inhabitants of the countryside,

5° the education level and the marital status of the unemployed are statistically irrelevant variables for the process of deregistering from unemployment. Based on this, no generalizations are possible.

6° Based on a different specification of **the age of the unemployed** we may say that

on the one hand:

a) with advancing age, the chance of leaving unemployment deteriorates from one year to another by 3.5%: $\text{Exp}(\text{age}) = 0.965$,

on the other hand:

b) the best chance of leaving unemployment have people aged 20 – 24. This group has a 3 times higher chance of deregistering from the resource than unemployed people above 60: $\text{Exp}(20 - 24 \text{ years}) = 3.005$.

Beginning with the age of 25, the chances of deregistering from the unemployed resource significantly decrease. The lowest chance have unemployed persons aged 50 – 54. With regard to 60-year-olds, their hopes of changing their professional activity status are diminished to merely 3.5% ($\text{Exp}(50 - 54 \text{ years}) = 1.035$).

Based on a different specification of **the profession group** we may say that on the one hand:

7a) a statistically significant influence on the deregistering process from the resource have professions of the major groups 2 (professionals) and possibly 7 (workers). The first group has a 27% higher chance of deregistering from the unemployment resource than elementary occupation workers: $\text{Exp}(\text{WG } 2) = 1.027$, the workers on the other hand have a 15.3% higher chance,

on the other hand:

7b) the best chance of leaving unemployment have professionals, technicians and associate professionals together (MPG 2 and 3). This group has a 35.8% higher chance of deregistering than senior officials, manager and office workers together (MPG 1 and 4): $\text{Exp}(\text{MPG } 2 \text{ and } 3) = 1.358$.

From this viewpoint also persons representing a conglomerate of professions MPG 5 – MPG 9 have a distinctively higher chance (22.3%) of leaving unemployment than senior officials, managers and office workers together (MPG 1 and 4): $\text{Exp}(\text{MPG } 5-9) = 1.223$.

3.2. Verification of the significance of mean differences – multifactorial variance analysis

In the further course of the presented empirical examination we are looking for the answers to two last questions, namely:

1° do the specified demo-social determinant variants differentiate in a statistically significant manner the probability level means of unemployment deregistering?

2° does the profession of the unemployed differentiate in a statistically significant manner the probability level means of unemployment deregistering?

Answers to these questions deliver the results of the *F-Fisher-Snedecor* test of between object main effects and the interactions of the general, multifactor permanent model of variance analysis.

The explained variable of each variance analysis model are estimates of predicted probabilities of deregistration from unemployment reached in logistic regression models MOD_35 and MOD_38.

Each time, the explaining variables (factors) are the full set of hypothetic, demo-social determinants of unemployment deregistration. Calculation details are given in Table 3.

Table 3

F-Fisher-Snedecor tests of between object effects

Variation source	PRE 35			PRE 38		
	Mean square	F	Significance	Mean square	F	Significance
Corrected model	1.015	5 631.9	0.000	2.559	14 433.1	0.000
sex	1.187	6 585.6	0.000	0.673	3 797.4	0.000
L_years/age_kl	0.478	2 653.9	0.000	2.445	13 786.2	0.000
education	0.001	7.3	0.000	0.001	7.6	0.000
duration time of unemployment (dtu)	11.425	63 390.9	0.000	11.635	65 613.5	0.000
seniority	0.691	3 834.4	0.000	0.736	4 151.7	0.000
marital status	0.413	2 288.7	0.000	0.390	2 198.4	0.000
area	0.630	3 498.0	0.000	0.593	3 345.3	0.000
CPS/Prof.gr.	0.266	1 475.1	0.000	0.590	3 330.1	0.000
sex interactions with:						
L_years/age_kl	0.005	26.6	0.000	0.024	137.3	0.000
education	0.001	2.8	0.040	0.001	4.2	0.006
duration time of unemployment (dtu)	0.045	252.2	0.000	0.046	258.7	0.000
seniority	0.001	4.2	0.015	0.001	3.9	0.019
marital status	0.001	5.5	0.004	0.001	6.7	0.001
area	0.003	18.3	0.000	0.004	20.1	0.000
CPS/Prof.gr.	0.002	13.2	0.000	0.005	29.4	0.000
Fixed value	78.190	433 828.6	0.000	41.551	234 319.6	0.000
Error	0.000			0.000		

S o u r c e: own calculations based on data from the District Job Center in Pabianice.

The results of the between object effects *F*-Fisher-Snedecor test explicitly show that there is a statistical significance of differences between mean deregistration from unemployment probability levels according to highlighted ontogenetic characteristics of the unemployed and the sex that remains in interactions with all demo-social determinants. The significance of these differences are well depicted by the mean probability levels of deregistration form unemployment according to the examined determinants and the logit model type shown in Table 4.

The typology taken into account in Table 4 makes it possible to watch the differences between the mean levels of anticipated deregistering probabilities highlighted due to determinant variants in alternative logit regression models.

Table 4

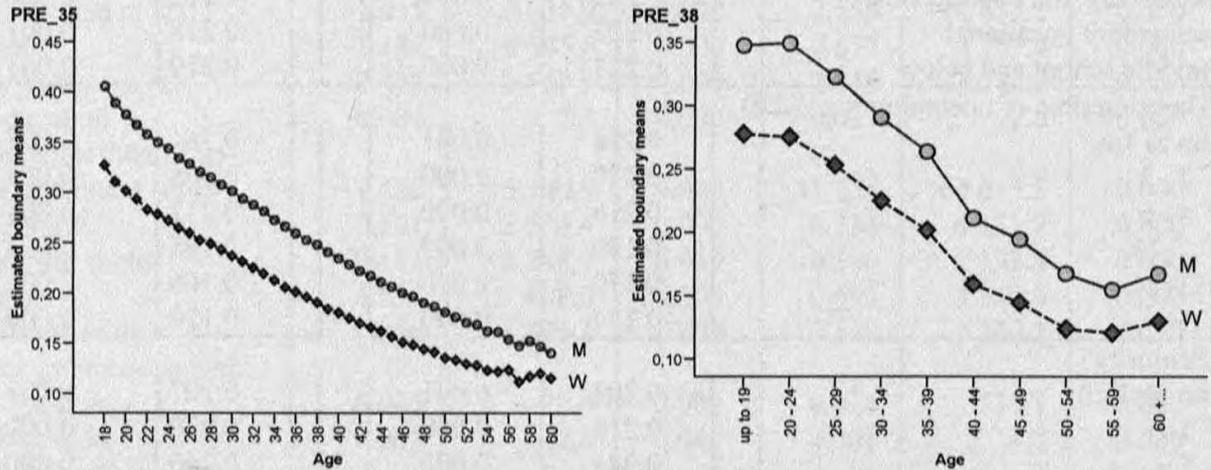
Means of anticipated deregistration probabilities according to determinants and the logit model

Determinant	PRE 35		PRE 38	
	Mean	Std. error	Mean	Std. error
Sex				
Man	0.250	0.000	0.247	0.000
Woman	0.195	0.001	0.191	0.001
Education				
higher	0.224	0.001	0.220	0.001
secondary and postsecondary	0.222	0.000	0.218	0.000
secondary vocational	0.222	0.000	0.218	0.001
middle school and below	0.223	0.000	0.219	0.001
Duration time of unemployment (dtu)				
up to 1m.	0.258	0.001	0.254	0.001
2-3	0.370	0.000	0.366	0.001
4-6	0.216	0.000	0.212	0.001
7-12	0.199	0.000	0.195	0.001
13-24	0.170	0.000	0.166	0.001
25+...	0.124	0.000	0.120	0.000
Seniority				
no seniority	0.208	0.001	0.207	0.001
1-5	0.216	0.000	0.210	0.000
5+...	0.244	0.000	0.240	0.000
Marital status				
maiden/bachelor	0.212	0.000	0.210	0.001
married man/woman	0.235	0.000	0.231	0.000
others	0.221	0.000	0.216	0.001
Area				
Konstantynów	0.243	0.000	0.238	0.001
Pabianice	0.219	0.000	0.215	0.000
other communes	0.206	0.000	0.203	0.001
Main professional group number				
1 / 2 and 3	0.194	0.001	0.239	0.001
2 / 5 to 9	0.252	0.001	0.222	0.000
3 / 1 and 4	0.236	0.000	0.196	0.001
4	0.203	0.001		
5	0.207	0.001		
6	0.249	0.001		
7	0.235	0.000		
8	0.214	0.001		
9	0.215	0.000		

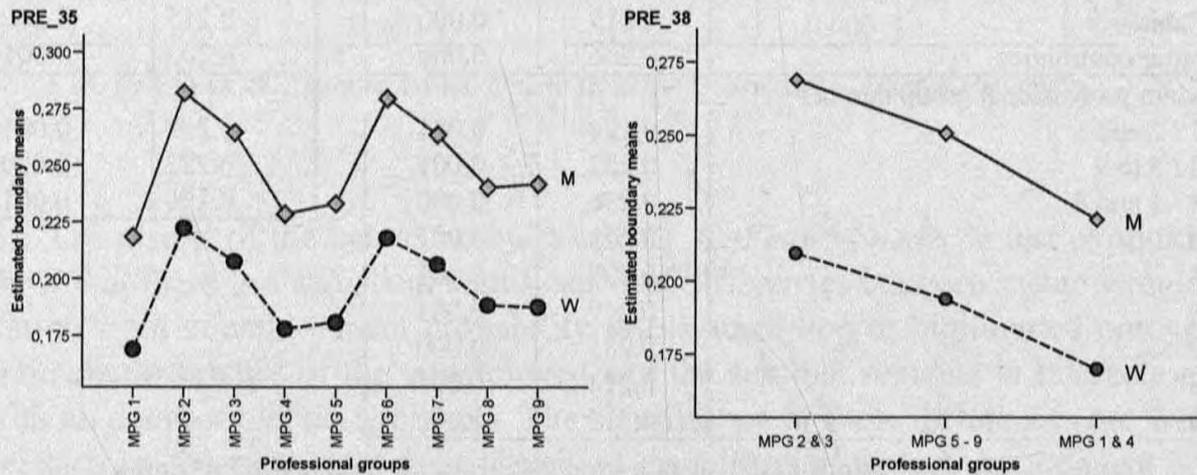
Source: own calculations based on data from the District Job Center in Pabianice.

It is easily perceivable that the determinant that differentiates the mean levels of deregistration probabilities in the weakest way is the education of the unemployed, while the strongest factor is the time the given person remains unemployed. Relatively weak determinants of the differences discussed are also the marital status, seniority and place of residence.

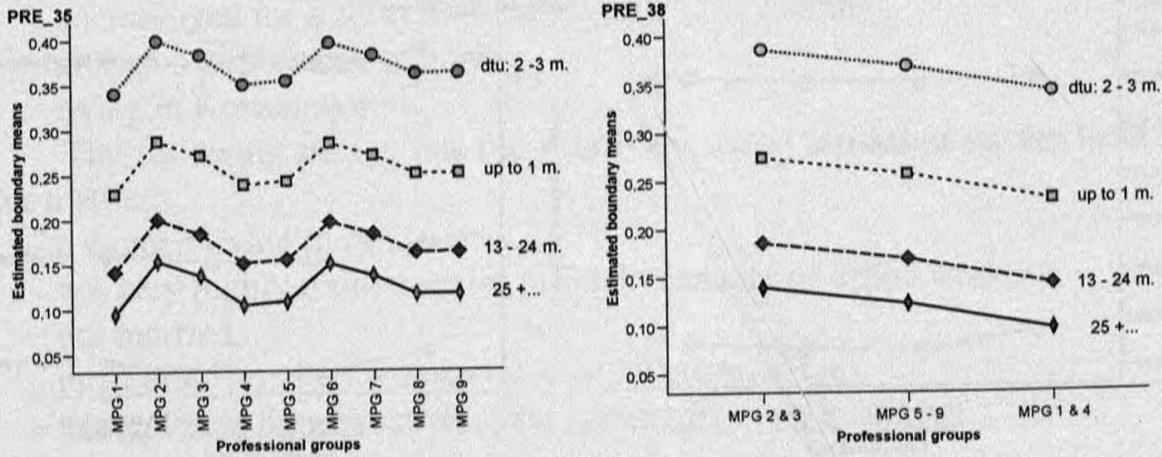
The presented one-dimensional distributions of edge means do not take disaggregation of the anticipated probabilities into account due to the other dimension, i.e. the second factor. When discussing this phenomenon it is helpful to selectively visualize the predicted deregistration probabilities in accordance with two determinants at the same time, especially the age of the unemployed and large profession groups confronted with some other determinants.



Graph 1. Unemployed deregistering probabilities in accordance with age and sex
Source: own calculations.

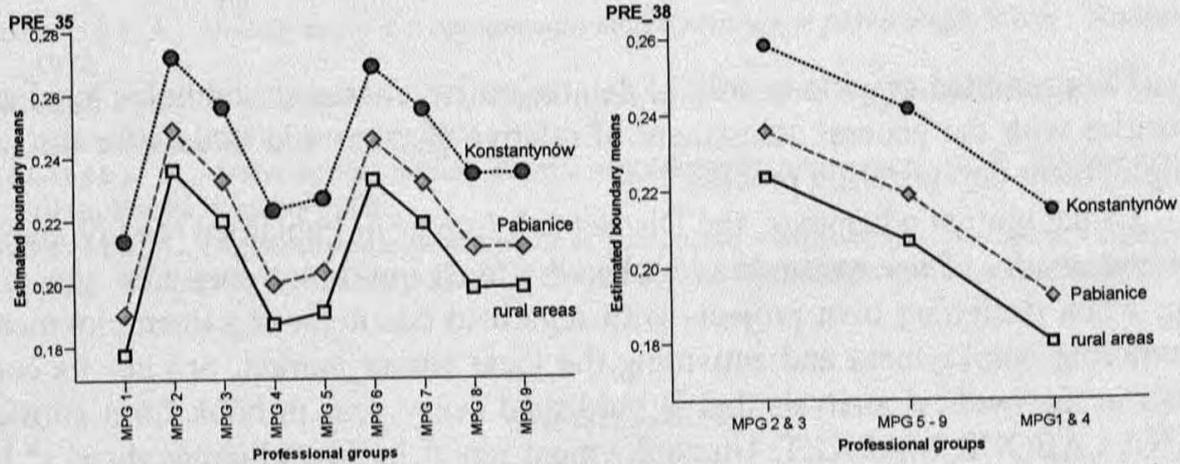


Graph 2. Unemployed deregistering probabilities in accordance with profession groups and sex
Source: own calculations.



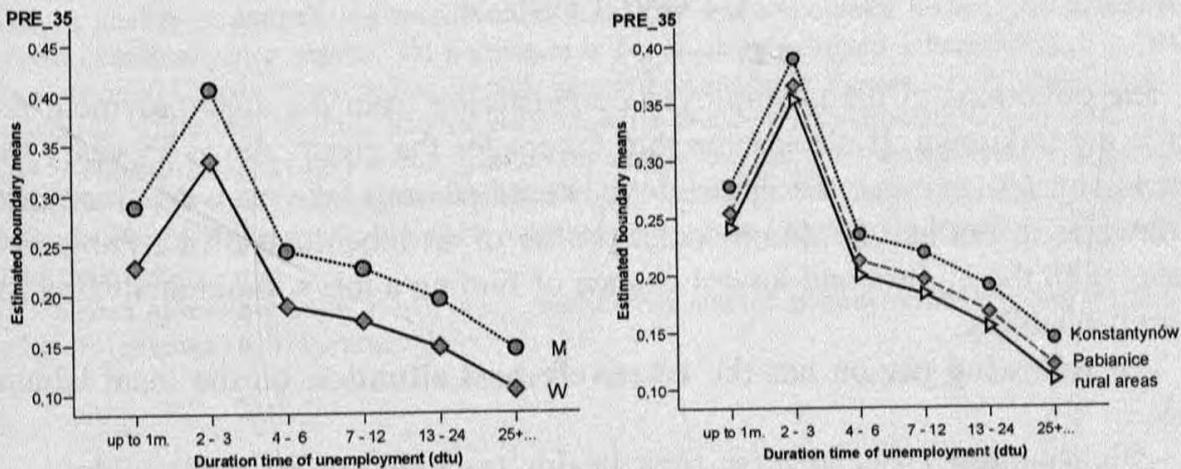
Graph 3. Unemployed deregistering probabilities in accordance with profession groups and unemployment period

Source: own calculations.



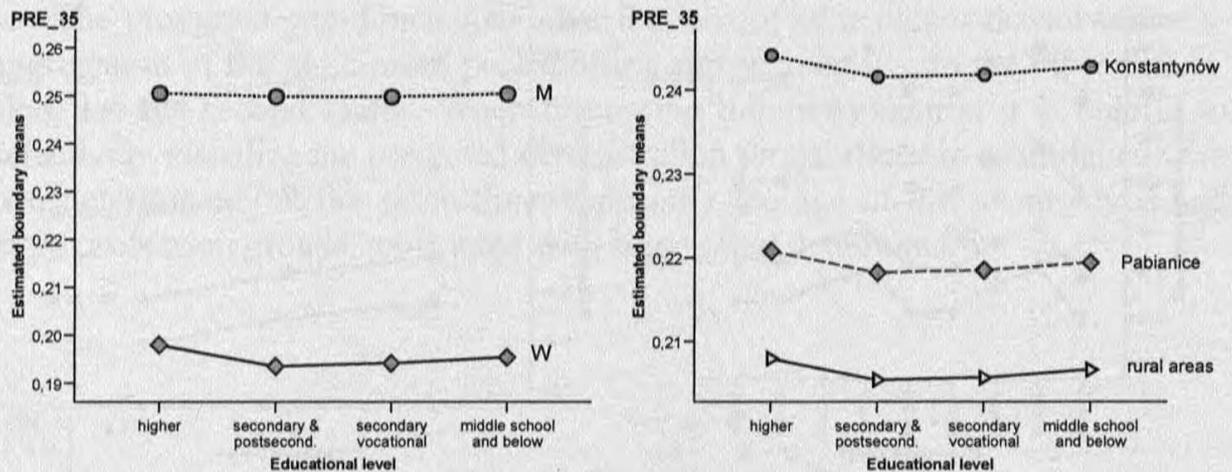
Graph 4. Unemployed deregistering probabilities in accordance with profession groups and place of residence

Source: own calculations.



Graph 5. Unemployed deregistering probabilities in accordance with unemployment period, sex and place of residence

Source: own calculations.



Graph 6. Unemployed deregistering probabilities in accordance with educational level of the unemployed, sex and place of residence

Source: own calculations.

The presented graphic is only of demonstrative character and helps local authorities with the general assessment of relative chances and threats for the unemployment deregistering process.

To the mutual advantage, the District Job Center in Pabianice readily analyses the results of my research and takes the most important ones into account, e.g. when designing own projects with regard to counteracting unemployment, promoting employment and activating the local labour market, or cites its contents in the cyclical analysis that is published every year in book form entitled "THE LABOUR MARKET. Unemployment report in the Pabianice district" by the District Job Center in Pabianice.

4. CONCLUSION

The directions of the unemployed deregistering from the unemployment resource are unknown. If we assume that except for the group above 55 years for women and 60 years for men most deregistered persons take up work, then it is worthwhile to outline the domo-social profile of an inhabitant of the Pabianice district with the highest and lowest chance of finding a job without analyzing its actual probability.

The following person has the **relatively best situation** on the local labour market:

- highly-trained specialist (science, health, teaching professional), male,
- married,
- most often a young person (up to 39 years of age),

- unemployed for a short time period only (2–3 months),
- at least 5 years work seniority,
- living in Konstantynów.

The following person has the **relatively worst situation** on the local labour market:

- a woman living in rural areas,
- not very highly trained senior official, manager of office worker,
- not married,
- most often an older woman (at least 50 years of age),
- unemployed for at least one year (more often two years),
- at short or no seniority.

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IDENTYFIKACJA PRZYCZYŃ WYREJESTROWAŃ Z BEZROBOCIĄ NA LOKALNYM RYNKU PRACY

Artykuł osadzony jest w konkretnych realiach lokalnego rynku pracy. Podjęta jest w nim tematyka analizy strumieniowej bezrobocia. Pod kątem przyczynowości badany jest strumień odpływu bezrobotnych z zasobu. Na podstawie indywidualnych danych o bezrobotnych z obszaru Powiatowego Urzędu Pracy w Pabianicach identyfikowane są te z osobniczych właściwości bezrobotnych, które statystycznie istotnie oddziałują na proces wyrejestrowań. Dzięki zastosowaniu metod regresji logistycznej i wieloczynnikowej analizy wariancji wspomaganym profesjonalnym oprogramowaniem statystycznym (SPSS v.14.0) Czytelnik dowie się, jak i pod wpływem jakich demograficzno-społecznych czynników kształtują się szanse i zagrożenia wyrejestrowań na lokalnym rynku pracy.

Słowa kluczowe: kalny rynek pracy, bezrobocie, analiza strumieniowa, regresja logistyczna, wieloczynnikowa analiza wariancji.