LABOUR RESOURCES IMBALANCES IN IAŞI COUNTY

Andrei Chirilă[1]

Abstract. This article tries to define workforce precariousness (regarded as the total of the persons that have no income), to produce a critical and constructive analysis of the concepts related to occupational status and to measure it at the communal scale. The second part of our study applies a multivariate analysis that takes into consideration demographical and workforce indicators, in other to establish the most vulnerable areas in Iaşi County.

Keywords: *Iaşi County, occupational status, workforce precariousness, multivariate analysis, vulnerable areas*

1. Introduction

In order to begin a quantitative analysis of the labour resources imbalances (in the present case in Iaşi County, on the basis of Population and Housing Census of 2002), the conceptual issues related to this question should firstly be clarified. The occupational status represents the relation between a person and his/her economic and social activity, but also the way that person provides the source of existence necessary for a living/the modality of obtaining revenues. (INS, 2010) The calculation method for determining the workforce precariousness degree takes into account precisely this concept (occupational status) and it is represented by the percentage of active and housekeeper population, that does not receive remuneration (money or payment in kind) and that has no income during the reference period (one week prior to the Census), in the total active and housekeeper population. According to the Romanian statistical methodology, these persons are especially unemployed, as the International Labour Organization defines this concept (therefore not necessarily included on the lists of Employment County Offices, but according to the own statements of the censused population), definition that states that an unemployed person should meet three conditions: to lack a job, to be available to become employed in the next 15 days and to actively seek a job. (Ia□u, 2006) Also, unpaid family workers are also included in this category, in other words those persons who work in a family economic unit belonging to a member of the household and who do not receive remuneration. Finally, we also considered housekeeper population in this category, because they are carrying out activities in the household, have no income and do not receive any salary or pension. It is observed that the definitions of the last two terms are quite similar; however, the first occupational category is included in economically active population, while the second is not. In this respect, we must interrogate on the accuracy of this classification, since the official definition of economically active persons states very clearly

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that they are 15 years and older and are performing an economic activity, in order to obtain an income (as wages, as payment in kind or as other benefits). In this case, we believe that family workers should not be included in this category because they don't obtain financial or other revenues (most of the time, the head of the household is the only member of the family that obtain them, statistically being defined as *worker on his own*). Moreover, according to the 17th International Conference of Labour Statisticians, unpaid family workers were included in informal employment, because they have not a contract or other type of formal employment. We can also put into question the non-inclusion of housekeeper population in the category of active population, whereas the latter includes the persons who provide available workforce for the production of goods and services, not being specified a maximum age limit. Thus, the housekeeper population represents a part of the available workforce, as they carry on household activities, fact meaning that they have an economic activity, even without realizing any income. In any case, we decided to select these three occupational categories, precisely because they fail to realize revenues, representing a possible source for the employment sector. In fact, these three categories of population are part of the unseen unemployment and they show the true gravity Romanian society is dealing with, especially in rural areas (in addition to demographic ageing). Unemployment itself may be considered as a form of waste of society's resources, comprising loss of production and income (Adumitrăcesei and Niculescu, 1995); unseen unemployment does not imply only such losses, but also a socio-economic situation at the limit of subsistence. We have not included workers on their own in the formula measuring the degree of workforce precariousness, because in the statistical databases, they are not differentiated between those working in non-agricultural activities and those working in agricultural activities. The ones from the first category carry on activities in their own workshop, in their own commercial unit or they are freelancers (so they have a source of income), while those from the second category obtain a non-wage income (the sale or the exchange of agricultural products and so on). Basically, there are also workers on their own who have worked for the production of goods exclusively for their own consumption (or their household), such as farmers in subsistence farms or as those who are building their own homes, but it is impossible to quantify their proportion in the total population, they also being considered major exponents of the informal sector (Pisică, 2011).

The next part of the study, closely related to determining the (quantitative) workforce precariousness degree envisages the calculation at the communal level of Iaşi County of the economic-occupational dependency rate. In this regard, a few specifications are needed: the economic dependency rate itself represents the ratio of the inactive population and the unemployed one, and the economically active population, suggesting the economic effort of the working population, having effects on the expenses with pension and health insurances. (Ia□u, 2006).As for the economic-occupational dependency rate, an indicator we've personally constructed, reporting will be done only to the population receiving any remuneration or that has its own source of income (employees, patrons and private entrepreneurs, workers on their own and members of the agricultural companies). In this case, the economic effort which we mentioned before will become one closer to the territorial realities.

The last part of the study consists in determining the correlation degree between various demographic and labour resources indicators, degree which is calculated by using the Bravais-Pearson correlation coefficient. It can take values between -1 and + 1 (-1 if the correlation is strongly positive, 0 if there is no correlation between indicators and -1 if it is strongly negative). Also, this part of the study includes a multivariate analysis (Main Components Analysis) of the indicators taken into account, at the communal level of Iaşi

County, in order to establish the most vulnerable areas from this point of view. The method of this analysis requires the classification of all spatial units, in respect to the correlation degree of each commune with all the considered indicators. Thus, a wide range of indicators has been used, in order to establish an approach that take into consideration complex territorial realities. This list includes the unemployment rate (ILO definition), the activity and economic activity rates, the percentage of employees, of workers on their own and of unpaid family workers in total of economically active population, the percentage of the population occupied in agriculture, industry, commerce and education/health in the total of economically active population, the employment rate (ratio between the employed population and the working age population), the economic dependency rate, the rate of workforce renewal (the ratio between the population between 15-24 years and the population between 55-64 years), the education level of the population being 10 years and older (relative values – superior, post-secondary, secondary, professional, primary and with no studies) and, finally, the workforce precariousness degree.

2. Results and discussions

2.1. Workforce precariousness in Iaşi County

The workforce precariousness degree varies between 19.56% in the case of Iaşi Municipality and 73,55% in the case of Schitu-Duca commune (figure 1), the county average being of 49,45%, fact that demonstrates that almost half of the total active and housekeeper persons (that would represent the potential labour resources) does not benefit from any income or remuneration. This is a situation of great concern, especially for the rural localities, characterized, in general, by economic activities of subsistence farming. The most vulnerable areas from this point of view are the southern (Ipatele, Dobrovăț Dagâța, Dolheşti and Costuleni) and the central-western ones (Cristeşti, Todireşti, Lungani, Oțeleni, Valea Seacă River or Mădârjac), with a share of unpaid family workers in total of the economically active population that reaches values of 60-65%. These vulnerable areas may also be extended in the north-central part of the county (the communes of Belce□ti, Focuri, Gropnița, Şipote, Bivolari or Plugari).

The lower values of the workforce precariousness degree of two communes in the same area (Vlădeni and Andrieşeni) are quite surprising. This situation may be due to a methodological error or to censors poor training, because the smaller number of unpaid family workers is compensated by a unexpected large number of workers on their own. Their definitions may be wrongly considered as very similar, especially that the questions in questionnaires (including the occupational status) have been addressed, most of the times, to uninformed people in terms of demo-economic matters, being very possible that the definitions were mistaken between them, both by the censors and by those censused.

On the other hand, most of the communes with unemployment rates well above the county average (over 15%), such as Hălăuceşti, Ciurea, Lespezi or Popricani, are not characterized by a high workforce precariousness degree, nor having substantial proportions of housekeeper population or of unpaid family workers. That is a logic situation in the case of those spatial units located in relative proximity to the two major urban centres in the county - Iaşi and Paşcani -, the only ones that may ensure a relative attractiveness for the workforce in their vicinity, inclusively for the unemployed, if they are perceived as part of the potential workforce. However, the areas influenced by these two towns are rather limited.

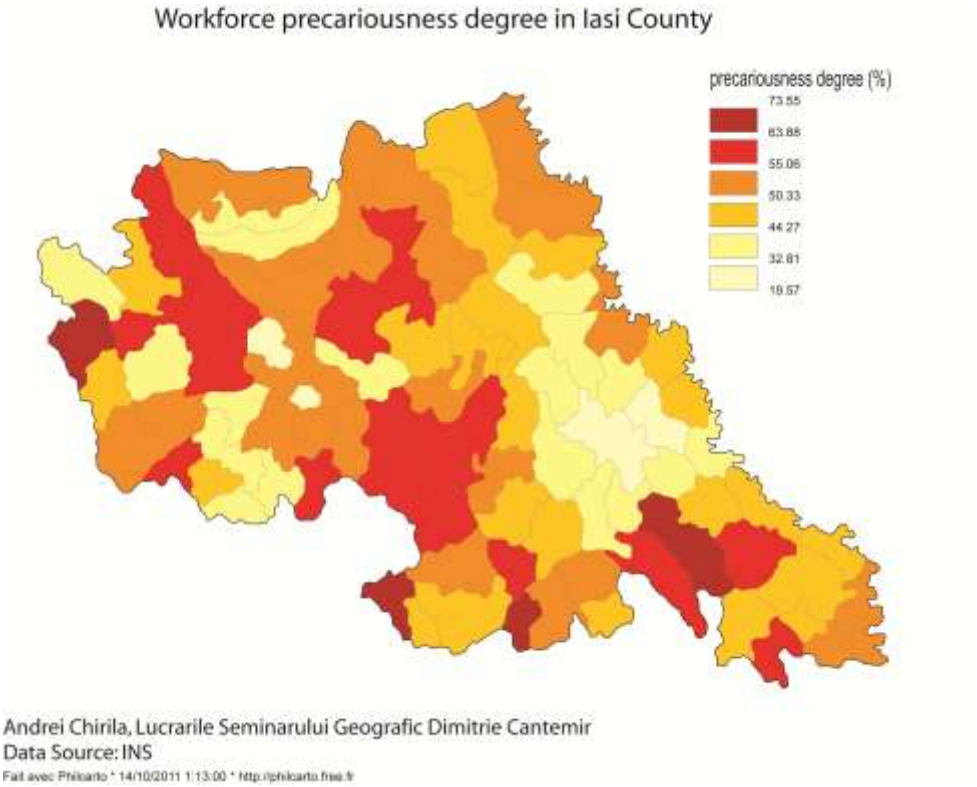

Figure 1: Workforce precariousness degree in Iaşi County

This situation may also be argued by the fact that most of the rural areas in the county are characterized by a significant proportion of housekeeper and active population without a source of income. This state of facts can be explained both educationally, since there is no obvious correlation between the level of education of rural population and the requirements for employment in the case of many vacancies (as the level of education and the experience in the field), but also socio-culturally (some people already beneficiate from social assistance funds, as a means of support for families whose income is below a certain threshold, others accept their economic subsistence situation) or economically (cost of living or cost of transport to these cities is often perceived as repulsive).

At the same time, the precariousness degree has an extremely high value inclusively for Iaşi Municipality (almost 20%), the most important economic centre in the north-east of the country. Although compared to other territorial units the county, Iaşi is situated in a privileged position, its socio-economic singularity must be taken into account, as it has been designated as the growth pole for the entire North-East Development Region, so this position becomes an extremely relative one. Moreover, in the case of the over 17 thousand unemployed and of the over 12 thousand housekeeper people, the *danger* of migrations from the left side of the Prut River is also worth being mentioned. These citizens could compete with the local population on available jobs (or on future ones) especially because at least some of them accept smaller wages and have, generally speaking, a similar level of education and work experience. The term *danger* was put in italics, as on short term these migrations would have negative effects on the categories above, but on medium and long terms, the emphasis of the phenomenon of ageing population could turn them into an opportunity, as the process of

granting Romanian citizenship become more active. However, changing the colour of the passport for the citizens of the Republic of Moldova (from the blue one - i.e. Moldovan – into the red one - i.e. Romanian) means giving them permission to move to Western Europe, especially to Italy, and less to Romania (Heintz, 2007). Among the over 600 thousand Moldovans migrants (estimates of the International Office for Migration), a large proportion go to Italy (their second favourite destination, after the Russian Federation, but unlike the latter, in this case we cannot speak about seasonal migration, but about a longer one). Thus, attracting Moldovan citizens (including those with dual citizenship) in Iaşi Municipality remains so far just a possibility, because Romania is still regarded as an intermediary territory than as a destination, even if Moldovans represent the most important migratory group in Romania (especially students) – 86% of all the immigrants received in 2008 (Stoleriu et al, 2011).

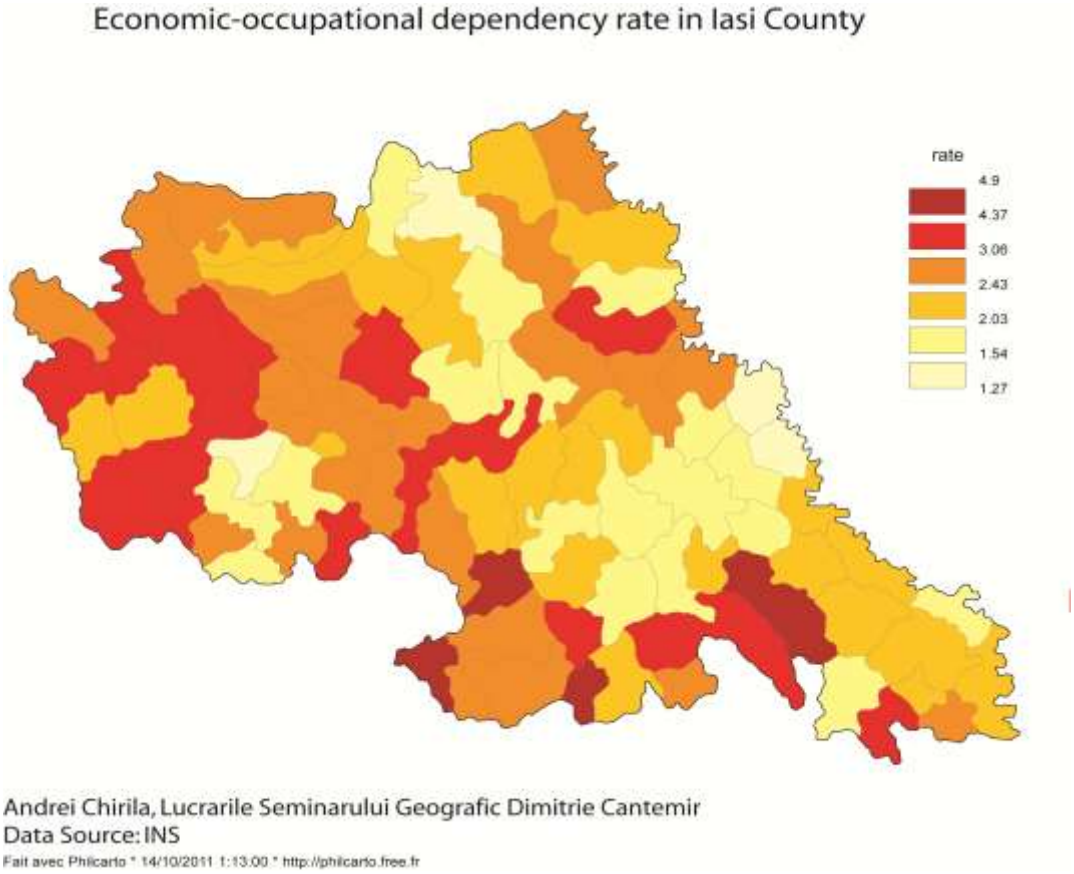

Figure 2: Economic-occupational dependency rate in Iaşi County

2.2. Economic-occupational dependency rate in Ia□i County

As it has previously been mentioned, the economic-occupational dependency rate is the relationship between inactive and unemployed population and the population receiving any remuneration or that has its own source of income (employees, owners and private entrepreneurs, workers on their own and members of agricultural companies), suggesting the economic effort of the active population. At the local level of Iaşi county, as in the case of

workforce precariousness degree, the most vulnerable areas are the southern ones (rates with values above 4 in Ipatele, Schitu Duca, Dagâța and Dobrovăț) and the central-western ones (Mădârjac, Todireşti, Ruginoasa, Belceşti or Vânători) (Figure 2).

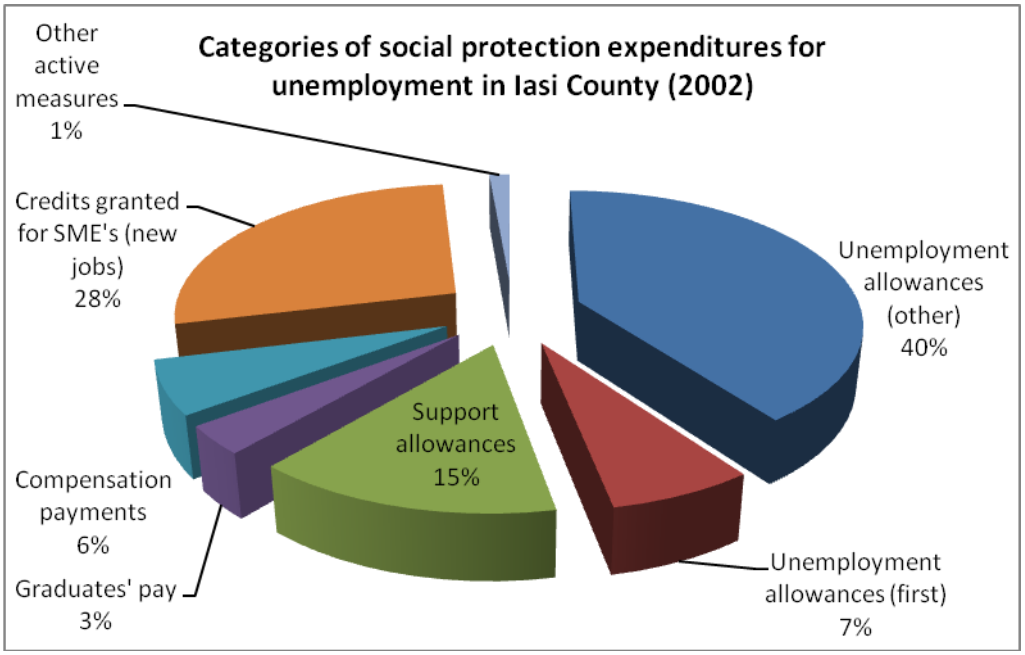

Figure 3: Categories of social protection expenditures for unemployment in Iaşi County

The County average is 2.618, which means, in a broader sense, the fact that there are over 2.5 times more persons receiving income from the State (pensions, support allowances, unemployment allowances and so on) than persons who carried out their own income. A high economic-occupational dependency rate has major effects on the expenses on pension and health insurances (passive measures), on the expenses on the social protection of the unemployed (active and passive measures) or on the expenses on social aids (passive measures). In the case of the latter, families whose income is below a certain threshold (varying on the size of the family) and who do not possess a range of goods that could provide an income in order to be capable of supporting their families shall be eligible. (Te□liuc et al, 2001).

Related to those considered above, the passive measures expenses (financial supports) for the unemployed social protection were much higher (in the case of Iaşi County, 2002) than the active measures expenses (figure 3). This particular year has been chosen in order to maintain the same temporal basis with other databases used in our study (Population and Housing Census, 2002). However, except for the subsequent years, the trend was exactly the same, meaning that the proportion between the active and the passive measures has been maintained.

Thus, 40% of the expenses represented unemployment allowances for those searching other jobs (frictional unemployment), 7% represented unemployment allowances for those searching their first job (structural unemployment), 15% - support allowances (the amount of money granted to persons who have benefited from unemployment allowance or from professional integration support and which could not find work – this allowance shall be

granted for a period not exceeding 18 months - INS, 2008). On the other hand, active measures expenses accounted for only 29% of the total - 28% credits granted for SME's in order to create new jobs and 1% any other active measures (expenses for professional training, payments to stimulate labour mobility – addressed to persons that find jobs in localities located more than 50 km from their domiciles and so on). Thus, we can state that employment is not actively encouraged. Moreover, unpaid family workers starting a self-employed or free-lance activity are not encouraged enough. Only an active measure exists in the official interventions from this point of view - Providing advice and support for starting independent activities or for initiating a business (INS, 2008) – whose addressability for residents of rural areas is pretty low.

2.3. Determination of the correlation degree between demographic and workforce indicators (MCA –*Main Components Analysis*)

In order to establish the correlation degree between various demographic and workforce indicators and to create the Main Components Analysis, the next variables have been used: the unemployment rate, the activity and economic activity rates, the percentage of employees, of workers on their own and of unpaid family workers in total of economically active population, the percentage of the population occupied in agriculture, industry, commerce and education/health in the total of economically active population, the employment rate, the economic dependency rate, the rate of workforce renewal, the education level of the population being 10 years and older and the workforce precariousness degree.

The correlation degrees are situated between -0.982 (percentage of the population economically active in agriculture and the share of the number of employees in the economically active population) and 0.903 (between the employment rate and the share of the number of employees) (table 1).

Table 1: Determination of the correlation degree between demographic and workforce indicators

		V01	V02	V03	V04	V05	V06	V07	V08	V09	V10	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21
V01	rata activitate 02	1000	661	-661	-550	307	399	562	-333	-471	-616	-203	-931	-191	-157	-348	-224	-236	97	213	188	-266
V02	% ocupat 02	661	1000	-1000	-798	424	713	803	-851	-755	-841	-578	-810	-384	-325	-531	-495	-579	317	514	274	159
V03	% someri 02	-661	-1000	1000	798	-424	-713	-803	851	755	841	578	810	384	325	531	495	579	-317	-514	-274	-159
V04	%salariati din oc 02	-550	-798	798	1000	-620	-621	-982	873	883	717	901	888	383	606	559	773	753	-519	-636	-414	-414
V05	lcp 02 %	307	424	-424	-620	1000	234	387	-582	-479	-472	-565	-405	-368	-492	-282	-498	-434	343	463	206	-27
V06	lf 02 %	399	713	-713	-621	234	1000	809	-898	-829	-602	-747	-542	-317	-491	-518	-648	-394	638	517	418	695
V07	oc agr 02 %	562	803	-803	-982	587	809	1000	-879	-888	-718	-872	-692	-415	-590	-592	-751	-740	681	657	403	391
V08	oc ind 02 %	-333	-851	851	873	-582	-898	-879	1000	789	502	962	477	442	519	689	735	758	-515	-636	-389	-429
V09	oc com 02 %	-471	-755	755	883	-479	-829	-888	789	1000	632	784	669	314	574	537	688	691	-574	-563	-276	-451
V10	oc is 02 %	-616	-841	841	717	-472	-602	-718	502	632	1000	541	671	395	690	619	514	368	-214	-549	-322	-139
V11	rata salarizare 02	-203	-578	578	901	-565	-747	-872	962	784	541	1000	382	288	630	682	818	763	-539	-620	-401	-597
V12	rata de dep ec 02	-931	-810	810	888	-405	-542	-692	477	669	671	382	1000	238	241	394	322	375	-189	-348	-211	145
V13	rata reinnoirii fm 02	-191	-384	384	383	-368	-317	-415	442	314	395	288	238	1000	210	354	124	207	-35	-460	-177	-103
V14	sup %	-157	-325	325	606	-492	-491	-590	519	574	690	630	241	210	1000	555	656	443	-386	-544	-314	-395
V15	pontic %	-348	-531	531	559	-282	-518	-592	689	537	619	682	394	354	555	1000	588	403	-190	-688	-279	-306
V16	lic %	-224	-495	495	773	-498	-648	-751	735	688	514	818	322	124	656	588	1000	660	-588	-632	-387	-554
V17	prof %	-236	-579	579	753	-434	-394	-740	758	691	368	763	375	207	443	403	660	1000	-665	-495	-351	-423
V18	gimn %	97	317	-317	-519	343	638	681	-515	-574	-214	-539	-189	-35	-386	-190	-588	-665	1000	133	101	800
V19	primar %	213	514	-514	-636	463	517	657	-636	-563	-549	-620	-344	-460	-544	-688	-632	-495	133	1000	109	381
V20	fara scoala %	188	274	-274	-414	206	418	403	-389	-276	-322	-401	-211	-177	-314	-279	-387	-351	101	109	1000	321
V21	precaritate %	-266	-159	159	-414	-27	695	391	-429	-451	-156	-597	145	-103	-395	-306	-554	-419	800	381	321	1000

None of them does surprise, but if in the case of the latter the correlation is absolutely logical, in the first case the population economically active in agriculture is represented, most of the time, by family workers and by workers on their own, meaning unpaid labour population. What has been stated above can be confirmed by the strong correlation between the share of unpaid family workers and the share of the economically active population in agriculture (0.902), the reciprocal relation also being true – correlations between the share of population occupied in industry/commerce and percentage of the number of employees (0.883

and 0.873, respectively). Another strong negative correlation is found between the activity rate and the economic dependence rate (0.931). Also, we consider important to mention the lack of any correlation between the proportion of workers on their own and the workforce precariousness degree (-0.027).

By mapping these results by the cartographic method of Main Components Analysis, the county administrative units were partitioned into five classes, depending on the relative position of each commune in relation to the average of each indicator in question. (Figure 4)

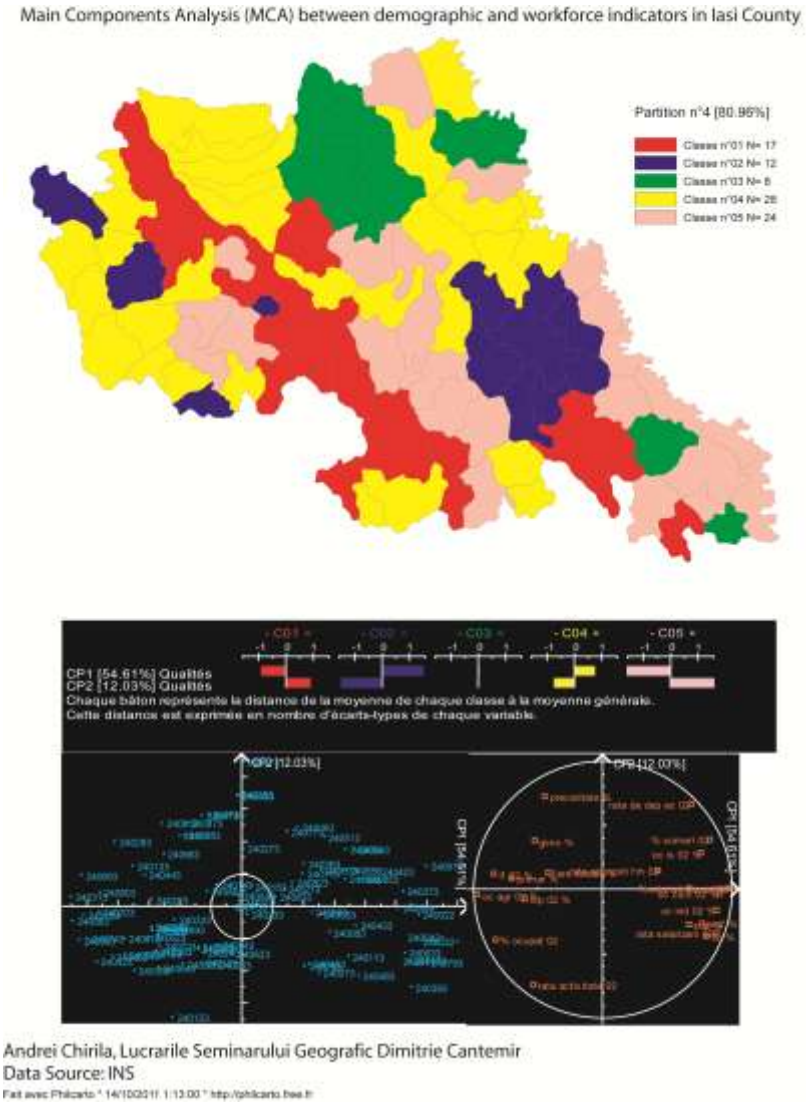

Figure 4: Main Components Analysis between demographic and workforce indicators in Iași County

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Thus, the first and fifth class (red and pink, respectively) represent the most vulnerable units in terms of labour resources. These classes are characterized by an under-represented MC1 (Main Component 1) and by an over-represented MC2 (as it can be seen in the quadrant that appears in the top left). They are negatively correlated to the unemployment rate, to the proportion of the employed population, to the population economically active in

non-agricultural sectors, or to the economic dependence rate and to the rate of workforce renewal. Moreover, these communes are positively correlated to the percentage of the unpaid family workers, to the workforce precariousness degree or to proportions of the population with study level inferior to the professional one. Thus, the most affected areas by the questions mentioned above contain communes like Sireţel, Vânători, Todireşti, Cucuteni, Belceşti, Ion Neculce, Brăeşti, Sineşti, Oţeleni, Ţibana, Mădârjac, Dagâţa, Mironeasa, Ipatele, Dobrovăţ, Schitu Duca and Dolheşti (the red class, aproximatively a ribbon in NW-SE direction), but also areas situated especially in the SW and in the SE of Iaşi Metropolitan Area – Popeşti, Horleşti, Şcheia, but also Comarna, Gorban and Ţuţora, inclusively a locality that aspires at town status - Răducăneni.

The second class (blue colour), generally urban or pseudo-urban, is characterized by positive correlations to the unemployment rate and economic activity rate, to the share of the population with levels of higher education, to the rate of workforce renewal or with the percentage population economically active in non-agricultural sectors. This class is connected with the development of the communes' non-agricultural economic functions and a strong dependence on urban markets (Stanny, 2010). Having a higher unemployment rate, it can be affirmed that the share of the population economically active in industrial and service fields is higher than the county average. In the case of rural administrative units this situation may be explained by the migration of the employed population to Iaşi (Aroneanu, Bârnova, Tomeşti, Holboca, Ciurea, Miroslava and Rediu) or Roman (Mirceşti) and Fălticeni/Paşcani (Tătăruşi), but also by a greater development of SME's than in the rest of the territory. The fourth class (the yellow one) represents the extension of the previous one. There is a positive correlation to values about average of the unemployment rate, the percentage of the economically active population in commerce and education/health service, the rates of economic dependence and population renewal and the percentage of population older than 10 years with professional and secondary school. The last three indicators in particular determine the placement of the respective localities in this class and the differences to the classifications that take into account the workforce precariousness degree and the economical dependency degree (a relatively high economical dependency degree, but which is compensated by a higher educational level and a larger amount of the 15-24 year old population). The localities of this class, at least theoretically, could provide young workforce in the obvious situation of population ageing, which has also become typical for the Ia□i county, that used to be seen as one of the last strongholds of totally positive balance (the reference period being 1992-2002; after the preliminary results of the population census of the year 2011 the county's population has decreased at 774,075, that is more than 40,000 less inhabitants than in 2002, when it used to be 816,910). The majority of the localities of this class are situated in the central-northern part of the county, such as Hălăuce□ti, Mogo□e□ti-Siret, Miroslove□ti, Stolniceni-Prăjescu - in these case, an explanation could be inclusively that the percentage of youth is above the county average, situation due the fact that religious (in this case, Catholic) groups are more likely to influence the demographic choices of their followers when members feel a strong sense of attachment to the religious community (McQuillan, 2004). Other localities are Deleni, Hârlău, Ceplenița, Scobinți and Cotnari or Vlădeni, Ţigănaşi, Popricani or Movileni.

Conclusions

The results of our study have revealed a quite disturbing situation regarding the workforce precariousness of Iaşi County, almost half of the total active and housekeeper population (that is, imperfectly being said, the potential workforce) not beneficiating from any

income or remuneration. Moreover, the average Ia□i County economic-occupational dependency rate has a value of 2.618, which means, in a broad sense, the fact that in the county there are over 2.5 times more people assisted by the State (pensions, support allowances, unemployment allowances and so on) than people who make their own income. As far as the geographical distribution is concerned, it can be affirmed that the most vulnerable localities (which find themselves in rather difficult positions in all three analyses of our study) are those situated in the central-south-western areas, the most explicit examples being Schitu Duca, Dobrovăț, Ipatele Dagâța, Mădârjac, Oțeleni, Belceşti,, Todireşti, Vânători and Sirețel.

Acknowledgements

This work was supported by the European Social Fund in Romania, under the responsibility of the AMPOSDRU [grant POSDRU/CPP 107/DMI 1.5/S/78342].

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