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A territorial analysis of the Gender Differences in Romanian Permanent Emigration

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***Abstract**: Romanian emigration is a mass phenomenon, which caused intense debate and numerous studies and research, both in terms of causes, and especially its effects, demonstrating a complex and multidimensional nature. Social and economic problems caused by emigration both for the country of origin and for the destination country become acuter. The statistical data shows that the number of women who leave Romania is higher than men, and research studies revealing the feminization of Romanian emigration, with more profound implication if we considered Romanian demographic trend. The aim of the study is to evaluate the assumption that the Romanian permanent emigration is distributed differently by gender and that there is a different concentration at the territorial level, considered the emigrants' departure place. The dataset used regard the distribution of the number of permanent migrants, women, and men, by their origin place both development region and county, for the period 1990-2014.*

***Keywords**: emigration, Gini-Struck coefficients, NUTS2, Romania*

Teritorijalna analiza polnih razlika unutar permanentne emigracije u Rumuniji

***Apstrakt**: Emigracija u Rumuniji je masovna pojava, koja je pokrenula intenzivnu debatu i mnoštvo studija i istraživanja, kako sa aspekta njenih uzroka, tako i sa*

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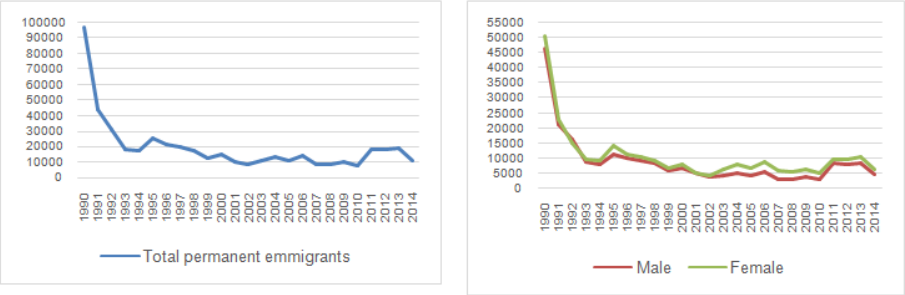
aspekta njenih efekata, demonstrirajući kompleksnost i multidimenzionalnost njene prirode. Socijalni i ekonomski problemi proistekli iz procesa emigracije, shodno zemlji porekla i zemlji krajnje destinacije emigranata, obostrano dobijaju epitet akutnosti. Statistički podaci ukazuju na činjenicu da više žena napušta Rumuniju od muškaraca, dok naučna istraživanja otkrivaju razloge feminizacije rumunske emigracija, uz razmatranje njenih dubljih implikacija na nacionalni demografski trend. Cilj rada je da se proceni pretpostavka da je rumunska emigracija različito distribuirana po polu, te da postoje razlike u njenoj koncentraciji na teritorijalnom nivou, uzevši u obzir mesto odlaska emigranata. Korišćeni set podataka koji se odnosi na distribuciju stalnih migranata (muškaraca i žena), prema teritoriji sa koje potiču (razvijeni i marginalni regioni), obuhvata period 1990-2014. godina.

***Ključne reči**: emigracija, Gini-Struck koeficijent, NUTS2, Rumunija.*

1. Introduction

In Romania, since 1989 profound changes have occurred in terms of the demographic trend, and one of the determinants of the dramatic decline in population was migration phenomenon. (Roman M. Voicu C., 2010). The first years, 1990 and 1991, are well known for high emigration, a significant number of Romanians chose to leave definitive the country. It is about the mass emigration of ethnic minorities (German and Hungarian) that had decided this before the events of 1989, or who had already taken steps in this regard and had been refused (Ethno barometer, 2004). Just since 1992, can talk about the permanent migration of Romanian ethnics (Andreescu, G., 2005).

Figure 1 The permanent Romanian emigration after communism



Source: authors' data processing based on National Institute of Statistics, Romania, tempo online

After 1992, year characterized by the largest number of applications for political asylum, permanent external migration was maintained at a high level as a response to the level of economic and social development of Romania, but the permanent emigration wave from Romania started to decrease steadily until 2007-2008 when the size of definitive migratory flux was the lowest, caused by the entry of Romania into the Union Europe. After the economic and financial crisis, the phenomenon increase somewhat, reaching remarkable levels. Considering the distribution of the permanent emigration by sex, statistical data indicate some prevalence of female migration compared to the male one. (Figure 1.a, b)

In this context, the working assumption throughout this study is that, except the period 1990-1992, external migration of Romanians was due to the disparities of economic regions in which they originate, emigration being the highlight as a cause of low living standards of the population in certain regions of Romania.

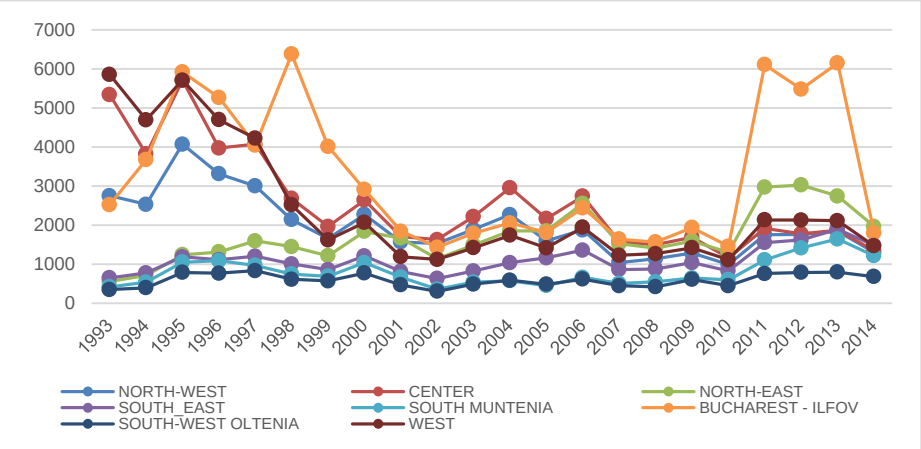
Romania has 41 counties plus the city - capital Bucharest, which has a similar status to that of a county corresponding to NUTS-3, organized in eight statistical regions, corresponding to NUTS-2 divisions of the EU but without the administrative capacities, called by position geographic country: North-West, North-East, South-West, South-East, South, West, Centre, Bucharest, and Ilfov.

Figure 2. Romania' NUTS 2 Regions

Source: http://ec.europa.eu/eurostat/documents/345175/7451602/nuts-map-RO.pdf

While in the early 90s Romania has had a relatively low level of regional disparities, given that all regions were underdeveloped, disparities between regions have increased rapidly, Bucharest-Ilfov Region standing out significantly since the mid-1990s of the rest of the country. Except for this region, which has a special situation in the country's social and economic context being the Romania capital, the development was done from the West-East direction, as a result of proximity to western markets which stimulated the growth. Romanian macroeconomic indicators also show that underdeveloped regions are concentrated in the northeast, on the border with Moldova, and in the south of the country, along with the Danube River.

Figure 3 Evolution of Romanian permanent emigrants by region of departure (NUTS2)



Source: authors' data processing based on National Institute of Statistics, Romania, tempo online

2. Dataset and methodology

Firstly, we present a descriptive analysis of the evolution of permanent emigrants by gender, in the spatial distribution by regions and counties of departure, for the period 1993-2014 and we test the significance of differences in the emigration by gender using specific methods with SPSS v. 20.0 for Windows.

For analyzing the spatial concentration of permanent emigrants by sex at the regional level of departure places, we apply Lorenz curve and Gini-Struck coefficient. We intend to detect the influence of regional development and

hence the impact of the socio-economic conditions in the decision to leave the country permanently.

Table 1 Evolution of Romanian permanent emigrants by region of departure (NUTS2)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
NORTH-WEST	11296	6754	5593	2752	2532	4070	3311	3003	2142	1657	2271	1569	1536	1893	2270	1595	1876	1045	1137	1284	992	1757	1766	1848	1301
CENTER	39681	15907	10991	5338	3819	5709	3971	4071	2683	1964	2640	1703	1628	2219	2958	2164	2739	1570	1504	1689	1163	1921	1776	1870	1345
NORTH-EAST	1761	1949	1015	558	711	1241	1315	1596	1450	1216	1837	1667	1140	1495	1853	1852	2556	1522	1412	1593	1302	2972	3027	2742	1964
SOUTH_EAST	1648	1776	873	652	778	1186	1113	1202	1005	857	1213	813	632	826	1039	1160	1360	863	881	1038	830	1551	1620	1894	1481
SOUTH MUNTENIA	1204	2188	614	420	540	1052	1087	971	750	690	1039	668	360	538	578	453	663	507	549	644	602	1107	1414	1646	1214
BUCHAREST - ILFOV	7977	4032	4381	2523	3678	5916	5266	4045	6376	4014	2913	1841	1431	1792	2057	1808	2440	1643	1567	1936	1456	6106	5479	6148	1797
SOUTH-WEST OLTENIA	827	1040	581	351	396	791	767	835	614	574	772	468	306	489	589	488	617	451	419	607	449	759	791	797	681
WEST	32535	10514	7104	5852	4692	5710	4696	4222	2516	1622	2068	1192	1121	1421	1738	1418	1946	1229	1270	1420	1112	2134	2128	2111	1468
ROMANIA	96929	44160	31152	18446	17146	25675	21526	19945	17536	12594	14753	9921	8154	10673	13082	10938	14197	8830	8739	10211	7906	18307	18001	19056	11251

Source: Data available on Tempo Online database, www.insse.ro

A distinct aspect of the structural approach is provided by the characterization of the degree of uniformity/concentration of the repartitions of permanent emigrants by sex per counties/regions.

In accordance with the data that are available, the territorial analysis of the Romanian emigration phenomena in the year 2014 will have to capture several aspects, with regard to both space, and time location: the proportions that are established between the gender of emigrants and the geographical distribution of their place of departure. In that respect, we use the most frequently resorted method of the Gini-Struck coefficient:

$$C_s = \sqrt{\frac{n \sum g_i^2 - 1}{n - 1}}$$

If the value of that coefficient, finally designated by the name Gini-Struck, tends towards 1, it is indicative of a high degree of concentration of the structure, and if the value of the coefficient tends towards 0, it indicates a poor degree of concentration of the population analyzed.

In the third part analyzed intra and inter-regional variation appealing to ANOVA. The study results are significant for mitigating the process of leaving the country permanently mainly due to the migration, mainly because Romania has registered structural changes with major demographic

implications. Firstly we present a descriptive analysis of the evolution of permanent emigrants by gender, in the spatial distribution by regions and counties of departure, for the period 1991-2014 and we test the significance of differences in the emigration by gender using specific methods with SPSS v. 20.0 for Windows.

3. Analysis of spatial distribution of migration by gender at the level of development regions of Romania

If we consider the Romanian permanent resident population, the observation of demographic data at the NUTS2 levels between 1993 and 2014, presented in table no.2, reveals a significant demographic decline across Romanian regions, both from men and women. We note demographic growth only in Ilfov-Bucharest region, around the Romania's capital and in North-East region, and only for women.

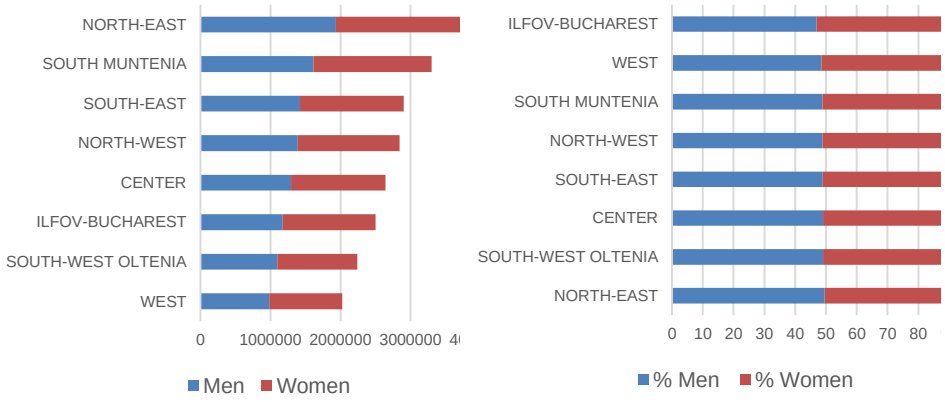
Table 2 Changes in Romanian Permanent Resident Population at January, 1st – distribution by sex and regions (NUTS2)

Regions	2014					1993					Changes		
	Total	Men		Women		Total	Men		Women		Total	Men	Women
NORTH-WEST	2841110	1389464	0,49	1451646	0,51	2954889	1461399	0,49	1493490	0,51	-3,85	-4,92	-2,8
NORTH-EAST	3899889	1935176	0,50	1964713	0,50	3858147	1922274	0,50	1935873	0,50	1,08	0,67	1,49
WEST	2026166	983441	0,49	1042725	0,51	2120182	1036337	0,49	1083845	0,51	-4,43	-5,1	-3,79
CENTER	2641067	1294768	0,49	1346299	0,51	2704881	1340918	0,50	1363963	0,50	-2,36	-3,44	-1,3
SOUTH-WEST OLTENIA	2237651	1097833	0,49	1139818	0,51	2442481	1202448	0,49	1240033	0,51	-8,39	-8,7	-8,08
SOUTH MUNTENIA	3300634	1611491	0,49	1689143	0,51	3564093	1754757	0,49	1809336	0,51	-7,39	-8,16	-6,64
SOUTH-EAST	2900677	1421167	0,49	1479510	0,51	3002730	1493588	0,50	1509142	0,50	-3,4	-4,85	-1,96
ILFOV-BUCHAREST	2498984	1173311	0,47	1325673	0,53	2471342	1172678	0,47	1298664	0,53	1,12	0,05	2,08
ROMANIA	22346178	10906651	0,49	11439527	0,51	23118745	11384399	0,49	11734346	0,51	-3,34	-4,2	-2,51

Source: Authors calculations from data available on Tempo Online database, www.insse.ro

But, it is worth noting that although the resident population has decreased considerably in the year 2014 compared with 1993, the gender structure of the population was maintained at the level of all regions and Romania, respectively with a sensitive superiority of women to men.

Figure 3 Romanian permanent resident population at January, 1st 2014 – distribution by sex and regions (NUTS2)



Source: authors' data processing based on National Institute of Statistics, Romania, tempo online

This decline is because a negative demographic growth affected Romania after 1990, in a large part, but, on the same time, emigration phenomenon hit Romania in various forms, permanent emigration being one of them. Comparing 2014 with 1993 in terms of Romania's population which has permanently residing abroad, by region of origin, reveals a significant decrease nationwide, but with alarming increase of the share of women compared to men both at the level of all regions, but, at country level. (See table no. 3). The situation is even more worrying as national statistics indicate a higher proportion of male permanently immigrants in Romania.

Table 3 Distribution of Permanent Emigrants by sex and departure regions, in the year 2014 comparing with 1993

Development region	2014					1993					Changes (persons)		
	Total	Men		Women		Total	Men		Women		Total	Men	Women
NORTH-WEST	1301	577	0,44	724	0,56	2752	1345	0,49	1407	0,51	-1451	-768	-683
NORTH-EAST	1964	815	0,41	1149	0,59	558	281	0,50	277	0,50	1406	534	872
WEST	1468	640	0,44	828	0,56	5852	2695	0,46	3157	0,54	-4384	-2055	-2329
CENTER	1345	593	0,44	752	0,56	5338	2582	0,48	2756	0,52	-3993	-1989	-2004
SOUTH-WEST OLTENIA	681	275	0,40	406	0,60	351	175	0,50	176	0,50	330	100	230
SOUTH MUNTENIA	1214	521	0,43	693	0,57	420	197	0,47	223	0,53	794	324	470
SOUTH-EAST	1481	590	0,40	891	0,60	652	325	0,50	327	0,50	829	265	564
ILFOV-BUCHAREST	1797	765	0,43	1032	0,57	2523	1151	0,46	1372	0,54	-726	-386	-340
ROMANIA	11251	4776	0,42	6475	0,58	18446	8751	0,47	9695	0,53	-7195	-3975	-3220

Source: Authors calculations from data available on Tempo Online database, www.insse.ro

While nationwide in the year 2014 decreased the number of permanent emigrants, there are Romanian regions where the phenomenon is manifested aggressive, especially in the regions considered with the standard of living very low, as North-East region on the border with Moldova, and South Muntenia, South-West Oltenia or South-East, regions in the south of the country, along the Danube River, regions where permanent emigration was not an option in the early 90s.

Figure 4 Romanian definitive emigrants by sex and departure regions, in the year 2014– distribution by sex and regions (NUTS2)

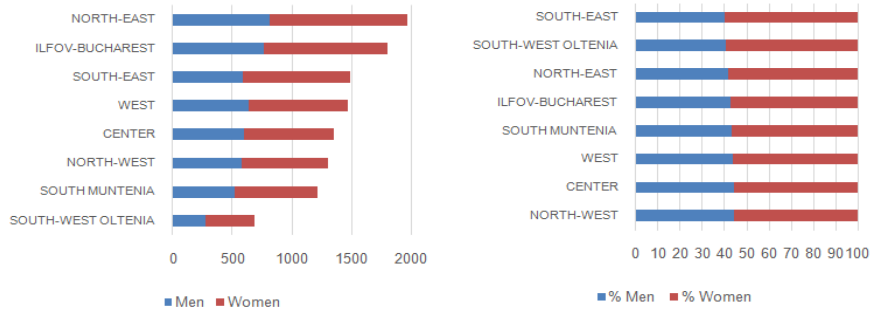
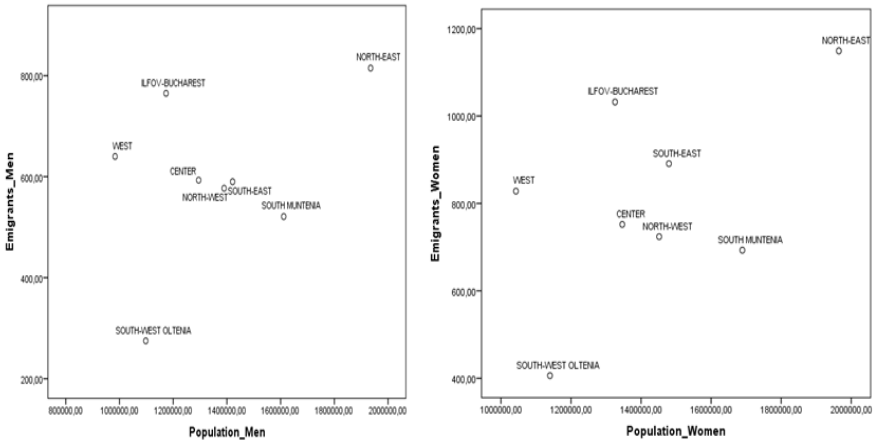


Figure 5 Correlation between definitive emigrants and permanent resident population by gender on the year 2014, at the level of Romanian regions (NUTS2)



Source: authors' data processing based on National Institute of Statistics, Romania, tempo online

It is obvious that the number of migrants from a given region is, to some extent, determined by the resident population of the same kind from the region of departure considered, creating a direct link between the two variables. The figure above presents the scatterplots for the links between resident population and emigrated population, during the year 2014, at the level of Romanian 8th regions, by gender. We note the linear relationship, with moderate intensity, higher among women, and the special situation of West and Ilfov-Bucharest regions.

If it is envisaged and the resident population in the regions, in terms of rates of emigration per 1,000 habitants, is remarkable the West region which remains at the first position between the regions of Romania, even if its migration has decreased, while the regions South Muntenia and South -West Oltenia with high levels of emigration definitive 2014 compared to 1993 still remain to claim its last position in the hierarchy both in terms of total population, and gender distribution.

The South-East, the region with the most interesting change of position regarding emigration, being on the 3rd place, especially amid women.

Table 4. The Rate of emigration per 1000 habitants at the level of regions, by sex, in the year 2014 comparing with 1993

Regions	Total emigrants					Men					Women				
	2014		1993		2014/1993	2014		1993		2014/1993	2014		1993		2014/1993
	Rate per 1000 habitants	Rank	Rate per 1000 habitants	Rank	Change in rank	Rate per 1000 habitants	Rank	Rate per 1000 habitants	Rank	Change in rank	Rate per 1000 habitants	Rank	Rate per 1000 habitants	Rank	Change in rank
WEST	0,7245	1	2,7601	1	►	0,6508	2	2,7404	1	▼1	0,7941	1	2,9128	1	►
ILFOV-BUCHAREST	0,7191	2	1,0209	3	▲1	0,652	1	0,981	3	▲2	0,7785	2	1,0565	3	▲1
SOUTH-EAST	0,5106	3	0,2171	5	▲2	0,4152	6	0,2287	5	▼1	0,6022	3	0,2167	5	▲2
NORTH-EAST	0,5036	4	0,1446	6	▲2	0,4212	3	0,1452	7	▲4	0,5848	4	0,1431	6	▲2
CENTER	0,5093	5	1,9735	2	▼3	0,458	4	1,9942	2	▼2	0,5586	5	2,0206	2	▼3
NORTH-WEST	0,4579	6	0,9313	4	▼2	0,4153	5	0,968	4	▼1	0,4987	6	0,9421	4	▼2
SOUTH MUNTENIA	0,3678	7	0,1178	8	▲1	0,3233	7	0,1222	8	▲1	0,4103	7	0,1232	8	▲1
SOUTH-WEST OLTENIA	0,3043	8	0,1437	7	▼1	0,2505	8	0,1594	6	▼2	0,3562	8	0,1419	7	▼1

Source: Authors calculations from data available on Tempo Online database, www.insse.ro

The degree of permanent Romanian emigrants' concentration according to the distribution of the resident population at the level of the development regions can be assessed using the Lorenz curve for whose graphical representation was calculated the cumulative shares for the years 2014, both for men and women.

Table 5. Algorithm for calculating the cumulative shared used for Lorenz curve graphic representation, for men in the year 2014

Regions	Resident population		Permanent emigrants		%Permanent emigrants (Men) /%Resident population (Men)	Cumulative % of Resident population (Men)	Cumulative % of Resident population (Men)
	No. of Men	%	No. of Men	%			
SOUTH-WEST OLTENIA	1097833	10,06572	275	5,75795645	0,5720362	10,06572	5,757956
SOUTH MUNTENIA	1611491	14,775305	521	10,9087102	0,7383069	24,841026	16,66667
.NORTH-WEST	1389464	12,739603	577	12,0812395	0,9483215	37,580629	28,74791
SOUTH-EAST	1421167	13,030278	590	12,3534338	0,948056	50,610907	41,10134
NORTH-EAST	1935176	17,743082	815	17,0644891	0,9617545	68,353989	58,16583
CENTER	1294768	11,871362	593	12,4162479	1,0458992	80,225351	70,58208
ILFOV-BUCHAREST	1173311	10,757757	765	16,0175879	1,4889338	90,983107	86,59966
WEST	983441	9,0168925	640	13,400335	1,4861367	100	100
Total - ROMANIA	10906651	100	4776	100	8,1894449		

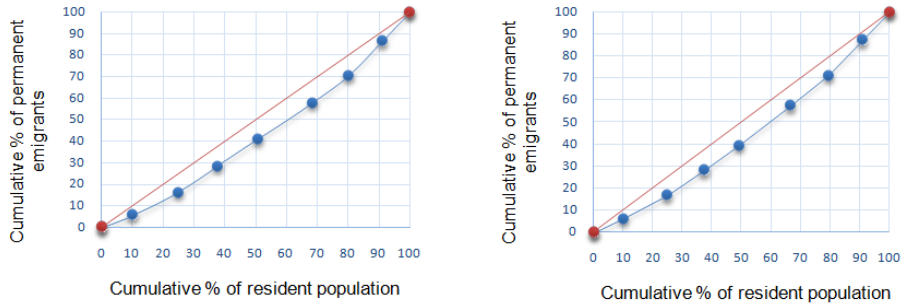
Source: Authors calculations from data available on Tempo Online database, www.insse.ro

Table 6. Algorithm for calculating the cumulative shared used for Lorenz curve graphic representation, for women in the year 2014

Regions	Resident population		Permanent emigrants		%Permanent emigrants (Women) /%Resident population (Women)	Cumulative % of Resident population (Women)	Cumulative % of Resident population (Women)
	No. of women	%	No. of women	%			
SOUTH-WEST OLTENIA	1139818	9,96385602	406	6,27027027	0,62930157	9,963856	6,27027
SOUTH MUNTENIA	1689143	14,7658465	693	10,7027027	0,64530947	24,7297	16,97297
.NORTH-WEST	1451646	12,689738	724	11,1814672	0,78447492	37,41944	28,15444
CENTER	1346299	11,7688345	752	11,6138996	0,87857236	49,18828	39,76834
NORTH-EAST	1964713	17,1747748	1149	17,7451737	0,91986084	66,36305	57,51351
SOUTH-EAST	1479510	12,9333145	891	13,7606178	0,94724216	79,29636	71,27413
ILFOV-BUCHAREST	1325673	11,5885298	1032	15,9382239	1,22445973	90,88489	87,21236
WEST	1042725	9,1151059	828	12,7876448	1,24899808	100	100
ROMANIA - Total	11439527	100	6475	100			

To assess the concentration of the gender emigration in the NUTS2 regions of Romania in 2014, the year for which data are available for all of them, and for compared each other, first the Lorenz curves were built. The data required graphical representations are shown in tables 5 and 6. The graphical representations in Figure 6, a) for men and b) for women, show a moderate level of concentration in both of the genders, if we consider the residence population of the same gender of each region as a point of reference in assessing the permanent emigration population by gender, but that indicates a difference over the year 2014, even if it is not significant.

Figure 5 Lorenz Curves



a) Men (year 2014)

b) Women (year 2014)

Concentration coefficients for each variable considered were calculated based on the data in Tables 5 and 6, the territorial concentration coefficients (territorial distributions) were determined using the concentration Gini-Struck, and presented in the Table 7.

Table 7 Algorithm for calculating Gini-Struck coefficients for Permanent emigrants in the year 2014

Development regions	Permanent emigrants			Permanentemigrants - men			Permanent emigrants - women		
	No.	g_i	g_i^2	No.	g_i	g_i^2	No.	g_i	g_i^2
NORD-WEST	1301	0,11563417	0,0133713	577	0,1208124	0,01459563	724	0,11181467	0,01250252
NORD-EAST	1964	0,17456226	0,030472	815	0,17064489	0,02911968	1149	0,17745174	0,03148912
WEST	1468	0,13047729	0,0170243	640	0,13400335	0,0179569	828	0,12787645	0,01635239
CENTER	1345	0,11954493	0,014291	593	0,12416248	0,01541632	752	0,116139	0,01348827
SOUTH-WEST OLTENIA	681	0,06052795	0,0036636	275	0,05757956	0,00331541	406	0,0627027	0,00393163
SOUTH MUNTENIA	1214	0,10790152	0,0116427	521	0,1090871	0,0119	693	0,10702703	0,01145478
SOUTH-EAST	1481	0,13163274	0,0173272	590	0,12353434	0,01526073	891	0,13760618	0,01893546
BUCHAREST+ILFOV	1797	0,15971914	0,0255102	765	0,16017588	0,02565631	1032	0,15938224	0,0254027
Total	11251	1	0,1333023	4776	1	0,13322098	6475	1	0,13355686

Source: Authors calculations from data available on Tempo Online database, www.insse.ro

The values obtained from the calculations for concentration coefficients, presented in the table below, reveal an insignificant concentration at the level of regions, both for men and women and also for the total permanent emigrants, but higher for women.

Table 8 Gini-Struck coefficients for Permanent emigrants, in the year 2014

Variables	Gini-Struck coefficient: $C_s = \sqrt{\frac{n\sum g_i^2 - 1}{n-1}}$
Total permanent emigrants	0,0974081
Total permanent emigrants - men	0,0969299
Total permanent emigrants - women	0,0988902

Source: authors' data processing based on National Institute of Statistics, Romania, tempo online

4. Analysis of spatial distribution of migration by gender at the level of counties

An analysis at the county level was necessary for identification the existing gender differences. Based on data from table 9 we analyzed intra and inter-regional variation appealing to ANOVA procedure to verify the hypothesis that the region / county of origin influences the permanent emigration by gender.

Table 9 Permanent emigrants, by gender and county of departure, in 2014

Development Region	County	Permanent emigrants		
		Total	Men	Women
NORTH-WEST	Bihor	176	84	92
	Bistriţa-Năsăud	219	96	123
	Cluj	351	156	195
	Maramureş	273	123	150
	Satu Mare	218	90	128
	Sălaj	64	28	36
NORTH-EAST	Bacău	434	181	253
	Botoşani	186	84	102
	Iaşi	542	222	320
	Neamţ	289	109	180
	Suceava	253	108	145
	Vaslui	260	111	149
WEST	Arad	286	112	174
	Caraş-Severin	293	131	162
	Hunedoara	290	135	155
	Timiş	599	262	337
CENTER	Alba	161	77	84
	Braşov	421	169	252
	Covasna	65	21	44
	Harghita	89	48	41
	Mureş	254	113	141
	Sibiu	355	165	190
SOUTH-WEST OLTENIA	Dolj	260	119	141
	Gorj	69	24	45
	Mehedinţi	92	32	60

Development Region	County	Permanent emigrants		
		Total	Men	Women
	Olt	162	64	98
	Vâlcea	98	36	62
SOUTH MUNTENIA	Argeş	175	79	96
	Călăraşi	132	50	82
	Dâmboviţa	211	98	113
	Giurgiu	92	41	51
	Ialomiţa	92	34	58
	Prahova	283	109	174
	Teleorman	229	110	119
SOUTH-EAST	Brăila	167	67	100
	Buzău	134	48	86
	Constanţa	444	171	273
	Galaţi	418	168	250
	Tulcea	147	72	75
	Vrancea	171	64	107
ILFOV-BUCHAREST	Ilfov	133	56	77
	Bucharest	1664	709	955
ROMANIA	Total	11251	4776	6475

Source: Data available on Tempo Online database, www.insse.ro

Regarding figure 6 it is noticed that permanent emigration density function has differences by gender.To test if the variables considered, permanent emigrants both for women and men have normal distributions, for the year 2014, was appealed the Kolmogorov - Smirnov statistically test (K-S) by using SPSS procedure.Sig. values K-S test, respectively 0.208 for men permanent emigrants and 0,224 for women permanent emigrants, in 2014 at the county level, higher than 0.05 indicate that the both variables have a normal distribution of data. (Table 10). The result was to retain the null hypothesis for both distributions.

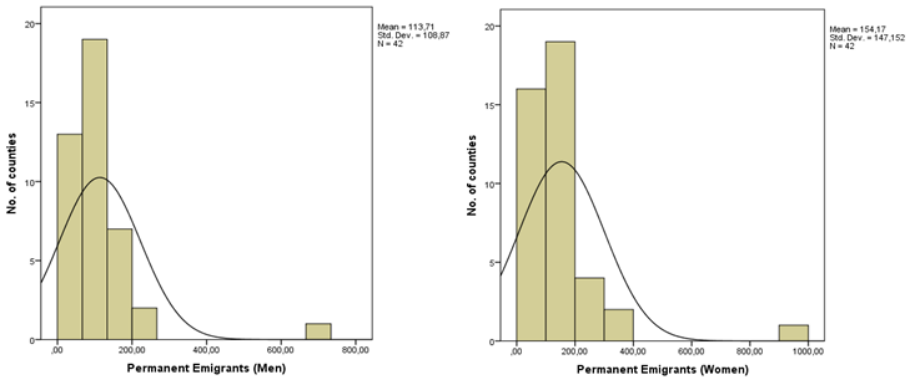
Table 10 Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Permanent_Emigrants_Men	,208	42	,000	,595	42	,000
Permanent_Emigrants_Women	,224	42	,000	,592	42	,000

a. Lilliefors Significance Correction

To have a graphic picture and having a visualization of differences between empirical and theoretical distribution have used the histogram.

Figure 6. Counties distributions on permanent emigrants - men and women, in 2014



Distribution of counties by women indicates an average and a dispersion that are higher than for men population. The average for women permanent emigrants by county in 2014 is 154,17, while the for men permanent emigrants is 113,71. In the same time, the standard deviation is equal to 147,152 for female permanent emigrants and 108,87 for male permanent emigrants.

Table 11 Descriptives

	Region	No. of counties	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						LowerBound	UpperBound		
Men	N-W	6	96,1667	42,73835	17,44786	51,3155	141,0178	28,00	156,00
	N-E	6	135,8333	53,40942	21,80431	79,7836	191,8831	84,00	222,00
	W	4	160,0000	68,73621	34,36811	50,6254	269,3746	112,00	262,00
	CENTER	6	98,8333	61,02595	24,91374	34,7905	162,8761	21,00	169,00
	S-W	5	55,0000	38,82010	17,36088	6,7985	103,2015	24,00	119,00
	S	7	74,4286	32,62339	12,33048	44,2570	104,6002	34,00	110,00
	S-E	6	98,3333	55,71595	22,74594	39,8630	156,8036	48,00	171,00
	ILFOV-BUCHAREST	2	382,5000	461,74073	326,50000	-3766,0758	4531,0758	56,00	709,00
	ROMANIA - TOTAL	42	113,7143	108,87032	16,79905	79,7879	147,6407	21,00	709,00
Women	N-W	6	120,6667	53,73143	21,93576	64,2790	177,0543	36,00	195,00
	N-E	6	191,5000	80,50528	32,86614	107,0149	275,9851	102,00	320,00
	W	4	207,0000	87,02107	43,51054	68,5301	345,4699	155,00	337,00
	CENTER	6	125,3333	84,74353	34,59640	36,4004	214,2662	41,00	252,00
	S-W	5	81,2000	38,68721	17,30145	33,1635	129,2365	45,00	141,00
	S	7	99,0000	41,84097	15,81440	60,3036	137,6964	51,00	174,00
	S-E	6	148,5000	88,52740	36,14116	55,5962	241,4038	75,00	273,00
	ILFOV-BUCHAREST	2	516,0000	620,83975	439,00000	-5062,0239	6094,0239	77,00	955,00
	ROMANIA - TOTAL	42	154,1667	147,15164	22,70599	108,3110	200,0223	36,00	955,00

Source:authors' data processing based on National Institute of Statistics, Romania, tempo online

Table 12 gives Levene test results regarding the similarity of variance. As this test is significant, the significance is p = 0.000, variances are homogeneous.

Table 12 Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Men	41,546	7	34	,000
Women	38,503	7	34	,000

Source: authors' data processing based on National Institute of Statistics, Romania, tempo online

The results of analysis of variance, ANOVA are presented in the following table for variables permanent emigrants both men and women. F ratio is significant in both cases.

Table 13. ANOVA

		Sum of Squares	Df	Mean Square	F	Sig.
Men	BetweenGroups	188632,524	7	26947,503	3,081	,013
	WithinGroups	297330,048	34	8745,001		
	Total	485962,571	41			
Women	BetweenGroups	341213,367	7	48744,767	3,032	,014
	WithinGroups	546584,467	34	16076,014		
	Total	887797,833	41			

Source: authors' data processing based on National Institute of Statistics, Romania, tempo online

This means that there are significant differences at the level of regions and between regions and within them, at the counties level, regarding permanent emigrants, men or women.

5. Conclusions

The work carried out a statistical evaluation of regional differences at the regional level focusing on permanent emigration from Romania in terms of gender differences. Data considered are for the period 1993-2014. The study results showed that there was a decrease in dynamic manifestation permanent migration as a whole, but an increase in female migration in the period considered. To achieve this objective, we measured the concentration of permanent emigration in the year 2014 for both women and men noticing the differences in the 8 regions. These differences, although insignificant, can be explained by the action of specific factors such as the level of development of the departure region of the emigrants. It was identified regions in which

migration had an atypical manifestation for both women and men. The analysis of intra and inter-regional variation distinguish significant differences at the level of regions and between regions and within them, at the counties level both for men and women permanent emigrants. Regional economic development affects the profile of emigration, by gender, by regions or by counties, in Romania in 2014.

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