Community-Regional Differentiations between Romanians' Emigrations to Eight Countries of Attraction

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Abstract. The flows of emigration from local communities to national societies, generally neglected, have a determination and inertia that need to be explained. This article focuses on these aspects. The theoretical model from which the analysis starts considers the role of local-regional development, the migration tradition and the region that integrates the local community. The data that are analyzed come from the 2021 census carried out in the country of origin of the flows (Romania). The interpretation of the community-regional selectivity of emigration is carried out in relation to EUROSTAT data on international migration flows. Development regions and regions structured around large cities are considered in the multivariate explanation of emigration flows.

Keywords: migration selectivity, seasonal migration, urban region, local human development index (LHDI), regional human development index (RHDI)

1. Introduction: questions

How are the migration fields of a country of emigration like Romania constituted? What matters more, the community of residence/departure or the region in which it is located? Are the short-term departures abroad (emigration of less than one year, intentionally) recorded at the time of the last census undertaken in Romania in December 2021, selective in the sense of having variable probabilities depending on the type of community (Sandu 2007), region or country? Such questions lead to a multi-level approach (Hox et al. 2017), which takes into account individual, community, regional and national factors. It is likely that all these factors, associated with different levels, matter to some extent. While unfortunately, individual survey or census data are not publicly available aggregate data for other levels has been provided.

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The hypothetical answer is affirmative: yes, all these factors matter. We do not know, however, how much and how. For which type of temporary emigration flow from the local community of origin to destination countries does the level of local or regional development/poverty matter more? There are NUTS 3 (counties), NUTS 2 (development regions), cultural regions with imprecise boundaries, such as historical ones, those established around large cities (Sandu 2020), or geographical (mountain, hill, plain, etc.). The answers given to such questions start from models with little specification (Sandu 2023) that ignore the role of development regions or urban regions, or the contribution of emigration traditions to a particular country.

Obviously, it is not possible to answer all these questions in a single paper. The present study continues and deepens previous approaches, trying to get closer to a detailed answer. The novelty of the present approach stems from focusing both on migration flows from local communities of origin to countries and investigating the role that the community migration tradition plays in determining new migration flows

Answers as detailed and reasoned as possible to the questions regarding the causality and prediction associated with emigration flows from local communities of origin to destination countries can constitute a solid basis for sustainable public policies in the field.

2. Method and data

The dependent variables, to be explained in the present analysis, are the temporary emigration rates, of no more than one year, for the country's territorial administrative units (TAUs) to eight of the main destinations of external migration in Romania, as recorded by the National Institute of Statistics (NIS), at the 2021 census. The destination countries considered are those in the "hexagon of European migratory attraction" (Sandu 2025), respectively Italy, Germany, Spain, France, Great Britain and Austria, plus the United States of America (USA) and Canada, from the North American continent. Unfortunately, the 2021 census only recorded temporary, short-term emigration, not long-term emigration (at least partially, as in 2011), for over a year. The basic hypothesis of the study claims that there is a community selectivity of the emigration rates from the localities, to the mentioned national destinations, depending on the poverty/development of the TAU, the local traditions of emigration abroad, as determined in the penultimate census of 2011, and depending on the region (development or urban) to which the locality belongs. This general hypothesis is operationalized by specifying three

hypotheses that take up the major factors of immigration selectivity. We will specify them below.

The first hypothesis claims, in accordance with the literature (Massey et al., 1999), that the rates of local, short-term emigration are higher from poor, small localities, located mainly in rural areas. For such localities, it is expected that the development gaps between the country of origin and those of ownership will be greater. Similarly, we expect emigration to be stronger from relatively poor regions, with the level of regional poverty-development being measured at NUTS 3 (counties) level by means of a regional human development index, RHDI[1], for short. The inclusion of the index of accessibility to large cities (IURCON) in the analysis is also subsumed to the idea of local development as a factor of emigration. We expect that rural localities close to large cities will be influenced to a greater extent by this proximity in the sense of intense departures to cities or to foreign destinations[2]. The measurement of particular aspects of development was carried out through the LHDI Local Human Development Index, the IURCON Urban Connectivity Index and the Regional Human Development Index (RHDI). LHDI, the 2018 version, is constructed, within a World Bank program, as a factorial score that aggregates material development, the standardized mortality rate, and the share of people who have internet access in the locality (Sandu 2022).

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[1] We have built the Regional Human Development Index (RHDI) as a factor score of the gross domestic product per capita, from the European Union average, the NUTS 3 population internet access index, and an index of the health status of the population in the regional territory (MINDEX). The MINDEX is in turn constructed as a factor score from the standardized mortality rate, the overall mortality rate, and the under-five mortality rate per 1,000 live births. The RHDI factorial score is brought to the range between about 0 and 100 as the Hull score. We calculated the RHDI index for 2019, before the COVID-19 pandemic and it is available for 1163 NUTS 3 in the European Union on the website of the related research project https://replace-horizon.eu/wp-content/uploads/2025/09/Europe_RHDI.xlsx .
The data for the computing of the RHDI at NUTS 3 level come exclusively from the public EUROSTAT database. RHDI served to contextualize community research from six countries included in the aforementioned project (Portugal, Spain, Italy, Germany, Romania and Latvia). A European map based on the RHDI development values is available on the project website at https://replace-horizon.eu/dashboard/."The Re-Place project has received funding from the European Union's Horizon Framework Programme for Research and Innovation under grant agreement n. 101094087. Part of the data analysis for this article is based on the resources of the Re-Place project consortium under EC grant agreement No. 101094087 and does not reflect necessarily the point of view of the European Commission. The European Commission is not responsiblefor the way in which the information contained in this document is used".

[2] For details on the construction of IURCON, see Ionescu-Heroiu et al. 2013, annex 13.

The second hypothesis of the analysis argues that it is expected that short-term emigration in 2021 will predominantly follow the long-term emigration trends of 2011, i.e. that preferred destinations will be maintained through a cumulative culture of emigration (Massey et al. 1999: 45-48). Even if the record of long-term emigration in 2011 was partial, it is expected that the short-term emigration in 2021 will be dependent on the structures of relations and the culture of emigration that were already crystallized at the community-region level in 2011.

The third hypothesis argues that the region itself, by controlling other factors, can influence the direction and intensity of emigration, in so far as the control factors relating to the level of local/regional development and previous migrations are not sufficient to eliminate the effects of the community migration culture. In the present analysis, we only operated with two types of regions, namely development regions (NUTS 2 equivalent in Romania) (Hansen et al. 1997) and urban regions or around large cities with over 200 thousand inhabitants (Sandu 2020).[3]

For the analysis of the impact of the development and previous experience of emigration from the communities, in relation to the eight dependent variables mentioned, we also opted for the use of multivariate regression (STATA Corporation 2007), assuming that the dependent variables are related to each other (tables A1 and A2). We also considered, separately, the rate of temporary emigration from the locality as a dependent variable, regardless of the country of destination, and as a method of analysis we used the regression based on the smallest squares method (OLS, table A3).

3. Results

3.1.Development effects

As expected, according to the first hypothesis, the higher the local poverty, the higher the stock of short-term emigrants (tables in annexes A1 and A2). The relationship is especially valid for emigrations to Italy, Spain and Germany, both for the model in which the development regions appear as predictors and for the case where the regional component of the prediction is given by urban regions (near large urban centers of more than 200 thousand inhabitants residing in that city). Local poverty does not seem to be a significant factor if departures are made in France, Austria, Canada and the United States of America. We do not know, with the available data, why this is so. It could be

[3] For the use of the county (NUTS 3) as a conditioning region for different emigrations by destination countries, with older data, from 2001 and 2011, the study by Sandu, 2018 can be consulted.

that emigration to the American continent, but also to Austria and France, is significantly determined by factors other than the local well-being of origin. A situation of uncertainty in interpretation, more pronounced than for the countries mentioned, is related to the case of emigration to the United Kingdom. Interpreting the results in Tables A1 and A2 comparatively, we tend to adopt the idea that the second model (from A2) might be more appropriate in explaining emigration to Great Britain compared to the model from A1.

The demographic development of the localities is given by the number of inhabitants. We don't know how much of this development comes from natural growth or migration growth. The more developed a locality is, in the sense of having more inhabitants, the stronger the emigration to the UK, the USA, Canada and Austria. These relationships are valid regardless of the form of region, its development or urban character, which are taken into account in the model. Emigration to Canada and the United States seems to be favored especially from large localities, regardless of their urban or rural status. Behind this data configuration is most likely the local-regional migration culture. If the interpretative hypothesis is valid, then it can be argued that, very likely, countries located at a great distance and with diasporas that have a higher average level of education, such as Canada and the USA, constitute specific poles of migratory attraction. It is a hypothesis that must be proven with data.

Regional poverty (with effects measured by RHDI) seems to matter especially in the case of migration to Italy, in the sense that poor localities send emigrants to this country in particular. We do not know why the same type of relationship occurs in the case of emigration to Great Britain when the regions taken into account for the prediction are urban regions, and not if the predictors refer to development regions. It could be, hypothetically speaking, because we do not have direct argumentative data about the learning effect of migration to Great Britain directly from Italy: for the last year that we have EUROSTAT data on emigration from Italy and to the United Kingdom, 2019, most Italians who had emigrated to the European Union were in Germany (over 586 thousand), Switzerland (over 319 thousand) and Great Britain (over 304 thousand).[4] In other words, Romanians in Italy, or those who have been to Italy, could learn from this pattern that Great Britain is an advantageous destination.

[4] See the EUROSTAT database in Table migr_pop1ctz**,** with the necessary adaptation, requesting the number of immigrants with Italian citizenship in different EU countries, for 2019.

Connectivity, in the sense of proximity of the analyzed locality in relation to large cities, seems to matter less for emigration, respectively only in the case of short-term migration to Italy: the closer the locality is (in Euclidean distance) to the large cities, of over 200 thousand inhabitants, the more likely it is to emigrate to Italy.

3.2. The effect of the migration tradition

The second hypothesis of the migration tradition is strongly supported by the results of the analysis (Tables A1 and A2). If we take into account the magnitude of the corresponding regression coefficients, it can be said that the strongest impact of the migration tradition seems to be in the case of short-term emigration to France and the United Kingdom. The localities that sent migrants for long periods of time to these two countries, according to the 2011 census record, display at the same time, high rates of short-term emigration at the 2021 census as well. Although at lower intensities, but at a significant level, this also occurs in the case of emigration to Italy, Spain, Canada and the USA. There is a long tradition for emigration to the USA, attested to since the interwar period (Galitzi 1929; Negrea 1933) or with reference to the interwar period (Rostas and Ţone 2018). Of course, there are exceptions to the rule. From the local communities in Romania from which many individuals previously departed to Germany, such intense departures no longer occured, according to records from the 2021 census. The reason behind this shift in pattern remains unknown for the moment. However, it may be assumed highly likely that a reorientation of some Romanian emigrations from Spain to Germany took place, according to a logic of learning the optimal flows: the Romanians who were in Spain learned that the main destinations of the Spaniards in Europe were to France, in the first place, and to Germany, in the second place[5]. In addition, the general reorientation of intra-European migration from the South to the global North has likely also played a role in this regard.

3.3. Region effect

The map of urban regions (Sandu 2022) overlaps, to a large extent, with the map of development regions (Hansen et al. 1997). The urban region of Iaşi, for example, is an integral part of the North-East development region, the urban region of Timiş overlaps to a large extent with the West region, the

[5] Finding based on the inspection of table migr_pop1ctz in the EUROSTAT database. The maximum number of Spanish citizens in the European space in that year was in France (over 180 thousand people) and in Germany (over 160 thousand people).

urban region of Braşov is an integral part of the Centre development region, etc. This is natural because the development regions, as they were designed in 1996, are, to a large extent, a synthesis between historical regions and urban regions. Based on these overlaps, we would expect regional effects to correspond, to a large extent, in tables A1 and A2. The expectation is confirmed by the results of multivariate regression analyses. The urban region of Iaşi and the North-East development region, for example, are significant predictors of both short-term emigration to Italy and the United Kingdom (see tables A1 and A2). Similarly, short-term emigrations to Italy, Austria and Canada are significantly higher for both departures from the Timiş urban region and departures from the West region. The departures from the regions of Constanţa and the South-East, regions partially cartographically overlapping, are consistent in statistical significance in the two tables compared. Similarly, departures from the TAUs of the Cluj and North-West regions, regions with obvious cartographic overlap, are made to common destinations such as Italy, Germany, France, Austria, the USA and Canada. The examples are sufficient to argue that although urban regions are partly different from development regions, their effects on short-term emigration are relatively similar.

The South-Muntenia (development) and Ploieşti (as an urban region) regions, partially overlapping, do not have a specific emigration. It seems to be the effect of both territorial diversity between the north and south of Muntenia and differentiated emigration.

A particular case is that of emigration to the USA. In the analysis with development regions as predictors, only the Northwest region appears as a significant predictor of emigration to the USA. In this case, regional classification in terms of urban regions seems to be more appropriate. Three of the urban regions of Transylvania appear, in Table A2, as favorable to emigration to the USA.

3.4. Emigration from the community, regardless of destination

How does this pattern shift when the flow of emigration is considered only by specifying the origin, without mentioning the country of destination, and do the previous conclusions hold? To a very large extent, this is the case (Table A3). In order to reach such a finding, we considered, as the only dependent variable, the rate of emigration from the UAT, without specifying the country of destination. In line with previous results, we found that short-term emigration in 2021, without specifying the country of destination, remains even higher the poorer the community of origin, which holds for rural

localities. Similarly, emigration remains specific to poor, county-type regions. Instead of a typology of emigration communities, we used, in the new regression equation, the rates of return to locality in different countries, in the 2021 census, taking into account the main countries of emigration in the European space (Sandu 2025). In this way, we have reached a new, very important finding, which indicates that more returns from Italy, Spain, Great Britain, France and Austria, lead to higher rates of emigration from the UAT. We do not know why regularity does not manifest itself in the case of returns from Germany. More seasonal migration to this country, fewer individuals returning from Germany, problems with knowledge of the German language? Further research based on such questions could help to obtain an answer.
From a regional point of view, we find that the emigration rates are significantly higher from the urban regions of Iaşi, Galaţi, Braşov, Timişoara and Cluj than from Oltenia, for the ATUs.

4. Conclusions

All three hypotheses mentioned in the methodology part of the analysis are confirmed by the analyzed data. The local effects of development, long-term migration tradition, and regional affiliation significantly differentiate between the different directions of short-term migration. In other words, the selectivity of short-term migration, recorded at the last census in 2021, at the local-regional level, is significantly determined by the aforementioned factors. Poorer localities and regions have higher rates of emigration to the eight European destinations mentioned. In general, the traditional effect of emigration to a particular European country or region is maintained. Short-term migration to Italy, for example, continues to be specific to localities in the Eastern regions of the country or in a variant determined by the large urban centers, by the urban regions of Iaşi and Galaţi.

The validation analysis, carried out on migration flows specified only by local origin, not by country of destination, confirms, to a large extent, the aforementioned regularities: poor communes in Romania send more migrants abroad, regardless of their placement in relation to large cities. Likewise, departures from poorer regions (according to RHDI values) abroad, mainly for work, are significantly more frequent. The exception is the communes in the urban regions of the cities of Ploieşti and Bucharest. The results obtained in the tables in the Annex do not provide sufficient information to clarify the matter.

We have a clear confirmation of the fact that there is a community selectivity of emigration, with inertia strongly supported by the tradition of migration. Mechanisms for the culture of migration and for the expansion of European knowledge through migration are the latent, interpretative variables, which can make such an inertia of emigration intelligible. The fact that the return migration to the localities of origin leads, caeteris paribus, to new emigrations is a clear proof of the fact that the returns are followed by remigrations, by the establishment of a community culture that stimulates the circulatory migration between localities in Romania and certain countries of emigration, especially the countries of attraction in the European "hexagon" of migration.

Methodologically, the data analyzed here convincingly reveal that long-term emigration, partially recorded in the 2011 census, continued to be relevant for short-term emigration in 2021 as well. Definitive renunciation of the partial registration of short-term emigration does not seem to be an optimal solution.

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Annex

Predictors of emigration to the main destination countries

Table A1. Temporary emigration from the development regions of Romania to specific countries

Predictors		Dependent variables: temporary emigration rates from LAU, in 2021, to…															
		Italy		Spain		Germany		France		The United Kingdom		Austria		The USA		Canada	
		coeff	p	coeff	p	coeff	p	coeff	p	coeff	p	coeff	p	coeff	p	coeff	p
Development	Local human development index 2018 LHDI	-0.102	0.000	-0.047	0.013	-0.047	0.013	0.005	0.783	-0.030	0.073	-0.016	0.205	0.002	0.055	0.000	0.417
	Index of urban connectedness IURCON	3.060	0.000	-0.342	0.439	-0.342	0.439	0.007	0.986	0.073	0.849	-0.339	0.246	-0.018	0.404	-0.002	0.788
	urban (1 yes, 0 no)	-2.540	0.024	-1.792	0.018	-1.792	0.018	0.049	0.948	-1.354	0.040	-0.978	0.050	0.033	0.358	0.011	0.333
	resident population 2011 (ln)	0.628	0.188	0.251	0.433	0.251	0.433	-0.170	0.592	0.672	0.016	0.422	0.046	0.035	0.023	0.010	0.036
	Regional human development index 2019 RHDI	-0.099	0.013	-0.038	0.153	-0.038	0.153	-0.049	0.062	-0.034	0.148	-0.015	0.387	0.001	0.322	-0.001	0.152
Typology of the long term emigration in 20 (reference category - reduced emigration)	Italy	5.586	0.000	-0.828	0.100	-0.828	0.100	-0.263	0.596	0.752	0.086	-0.315	0.343	0.002	0.944	0.003	0.730
	Spain	-1.329	0.088	6.559	0.000	6.559	0.000	-0.560	0.279	-0.396	0.384	-0.371	0.283	0.004	0.863	-0.018	0.025
	Italy and Spain	-1.020	0.196	0.052	0.921	0.052	0.921	-0.811	0.121	0.020	0.966	-0.875	0.012	-0.037	0.141	-0.008	0.327
	Germany	-0.699	0.819	-0.609	0.767	-0.609	0.767	-1.476	0.467	-1.285	0.472	4.220	0.002	-0.153	0.117	-0.028	0.361
	France	-2.550	0.284	-3.061	0.055	-3.061	0.055	12.307	0.000	1.807	0.193	-1.303	0.217	0.059	0.438	-0.036	0.138
	The UK or USA	-1.310	0.778	-1.394	0.654	-1.394	0.654	-0.953	0.757	14.122	0.000	-0.121	0.953	0.552	0.000	0.123	0.009
	Hungary	-2.932	0.150	-2.725	0.047	-2.725	0.047	-1.967	0.146	-1.230	0.301	-1.358	0.133	-0.082	0.210	-0.034	0.096
Development region (reference category South West -Oltenia)	Nort East	10.427	0.000	0.822	0.214	0.822	0.214	0.020	0.976	3.857	0.000	-0.068	0.877	-0.019	0.539	-0.003	0.790
	South East	7.547	0.000	1.330	0.052	1.330	0.052	-0.424	0.530	0.849	0.153	-0.452	0.316	-0.030	0.354	-0.005	0.638
	South Muntenia	-1.568	0.100	1.126	0.079	1.126	0.079	-0.365	0.564	-0.162	0.771	-0.344	0.416	-0.044	0.150	0.010	0.285
	West	2.335	0.046	0.017	0.982	0.017	0.982	0.595	0.443	-0.409	0.549	5.047	0.000	0.037	0.318	0.027	0.023
	North West	3.612	0.000	3.031	0.000	3.031	0.000	3.579	0.000	0.462	0.444	2.679	0.000	0.093	0.005	0.039	0.000
	Central	-0.419	0.702	-0.613	0.403	-0.613	0.403	-0.074	0.919	-0.949	0.137	0.388	0.423	-0.025	0.475	0.025	0.026
	Bucharest-Ilfov	1.195	0.642	-0.427	0.805	-0.427	0.805	-0.668	0.696	-0.624	0.677	-0.245	0.830	-0.132	0.109	-0.008	0.742
	_cons	1.756	0.635	5.007	0.044	5.007	0.044	4.376	0.075	0.270	0.901	-0.803	0.625	-0.274	0.021	-0.069	0.065
	R2	0.223		0.100		0.099		0.048		0.080		0.077		0.032		0.020	
	N	3027		3027		3027		3027		3027		3027		3027		3027	

Data source: NIS. Own computations: multivariate regression (mvar) in STATA. The models of prediction are the same in the two tables A1 and A2, excepting the typology of regional location of communes, towns or cities. Shadow for significant coefficients $p<0.05$.

Table A2. Temporary emigration from the regions of the large cities in Romania to specific countries

Predictors		Dependent variables: temporary emigration rates from LAU, in 2021, to…															
		Italy		Spain		Germany		France		The United Kingdom		Austria		The USA		Canada	
		coeff	p	coeff	p	coeff	p	coeff	p	coeff	p	coeff	p	coeff	p	coeff	p
Development	Local human development index 2018 LHDI	-0.098	0.000	-0.059	0.002	-0.059	0.002	0.001	0.976	-0.037	0.023	-0.020	0.107	0.001	0.163	0.000	0.783
	Index of urban connectedness IURCON	2.162	0.002	-0.461	0.315	-0.461	0.315	-0.279	0.539	-0.158	0.692	-0.528	0.081	-0.027	0.224	0.001	0.938
	urban (1 yes, 0 no)	-3.086	0.006	-1.989	0.008	-1.989	0.008	-0.163	0.826	-1.564	0.016	-0.928	0.059	0.031	0.387	0.011	0.346
	resident population 2011 (ln)	0.902	0.059	0.378	0.232	0.378	0.232	-0.067	0.831	0.836	0.002	0.467	0.025	0.039	0.010	0.011	0.016
	Regional human development index 2019 RHDI	-0.145	0.000	-0.046	0.065	-0.046	0.065	-0.046	0.064	-0.045	0.039	-0.012	0.461	0.000	0.799	-0.001	0.110
Typology of the main emigration destination in 2011 (reference category - reduced	Italy	5.668	0.000	-0.689	0.160	-0.689	0.160	-0.123	0.799	0.932	0.029	-0.329	0.307	0.009	0.705	0.003	0.723
	Spain	-1.737	0.026	6.421	0.000	6.421	0.000	-0.709	0.165	-0.448	0.319	-0.464	0.172	0.003	0.908	-0.018	0.021
	Italy and Spain	-0.824	0.294	0.019	0.971	0.019	0.971	-0.780	0.129	-0.039	0.930	-0.819	0.017	-0.030	0.223	-0.009	0.271
	Germany	-1.743	0.573	-0.866	0.672	-0.866	0.672	-1.940	0.338	-1.569	0.379	3.642	0.007	-0.167	0.086	-0.032	0.289
	France	-2.623	0.269	-2.452	0.118	-2.452	0.118	12.609	0.000	1.752	0.200	-1.529	0.139	0.079	0.287	-0.032	0.168
	The UK or USA	-2.022	0.666	-1.073	0.730	-1.073	0.730	-0.650	0.832	14.220	0.000	0.002	0.999	0.556	0.000	0.124	0.007
	Hungary	-4.644	0.025	-2.599	0.058	-2.599	0.058	-1.493	0.269	-1.607	0.178	-1.106	0.219	-0.111	0.088	-0.030	0.142
Large urban region (reference category: Craiova)	Ploiesti	-0.026	0.982	1.208	0.122	1.208	0.122	0.132	0.864	0.086	0.900	-0.025	0.961	-0.013	0.717	0.005	0.690
	Galati	9.899	0.000	1.207	0.119	1.207	0.119	-0.324	0.671	2.569	0.000	-0.446	0.381	-0.016	0.672	-0.008	0.466
	Constanta	2.800	0.069	3.293	0.001	3.293	0.001	-0.110	0.913	1.423	0.109	-0.200	0.766	0.036	0.457	0.017	0.272
	Iasi	10.954	0.000	0.346	0.599	0.346	0.599	-0.063	0.922	3.335	0.000	-0.035	0.935	-0.009	0.781	-0.009	0.374
	Brasov	3.103	0.004	-0.477	0.503	-0.477	0.503	-0.363	0.607	-0.017	0.978	0.254	0.589	0.075	0.028	0.020	0.060
	Timisoara	3.285	0.006	0.171	0.830	0.171	0.830	0.913	0.245	0.048	0.944	5.748	0.000	0.080	0.034	0.033	0.005
	Cluj	3.157	0.001	2.009	0.001	2.009	0.001	2.590	0.000	0.400	0.447	1.911	0.000	0.091	0.002	0.034	0.000
	Bucuresti	-1.897	0.088	0.311	0.673	0.311	0.673	-0.682	0.348	-0.542	0.398	-0.703	0.147	-0.047	0.175	0.004	0.688
	_cons	1.574	0.671	4.961	0.043	4.961	0.043	3.996	0.099	-0.259	0.904	-0.820	0.612	-0.274	0.019	-0.075	0.042
	R2	0.220		0.096		0.096		0.042		0.074		0.078		0.032		0.020	
	N	3064		3064		3064		3064		3064		3064		3064		3064	

Data source: NIS. Own computations: multivariate regression (mvar) in STATA. The models of prediction are the same in the two tables, A1 and A2, excepting the typology of regional location of communes, towns or cities. Shadow for significant coefficients $p<0.05$.

Table A3. Temporary emigration from the regions of the large cities in Romania 2021

Predictors		Coeff	p
Development	Local human development index 2018 LHDI	-0.259	0.001
	Index of urban connectedness IURCON	-3.338	0.082
	urban (1 yes, 0 no)	-9.020	0.003
	resident population 2011 (ln)	-1.137	0.390
	Regional human development index 2019 RHDI	-0.279	0.008
Rate of return from…	Italy 2021	0.143	0.001
	Spain 2021	0.135	0.003
	Germany 2021	-0.031	0.672
	the UK 2021	0.195	0.011
	France 2021	0.551	0.000
	Austria 2021	1.139	0.000
Large urban region (reference category: Craiova)	Ploiesti	3.672	0.258
	Galati	19.272	0.000
	Constanta	12.946	0.002
	Iasi	29.636	0.000
	Brasov	15.948	0.000
	Timisoara	13.719	0.000
	Cluj	14.549	0.000
	Bucuresti	-5.494	0.074
_cons		46.728	0.000

Data source: NIS. Own computations: multiple regression (regress) in STATA. Shadow for significant coefficients $p<0.05$