

# Public Services Impact on Urban Migration Phenomenon in Romania

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## **Abstract**

*Both urban and rural migration phenomena are determined by standard of living, unemployment rate, widespread corruption, poverty and lack of private investments. It is widely considered that macro-economic indicators are responsible for the standard of living at a national level, imaging a top-down effect, without analyzing how local level is impacting the national standard of living. In this mindset, local authorities are not concerned about urban migration since this is a national effect, and their decisional contribution would be anyway an ineffective one. This paper aims at revealing that there are some local administrative elements that might influence urban migration, public services being part of them. Bearing in mind the necessity of fulfilling citizens' requests, public managers are facing a mandatory duty regarding public services quality. In this paper there are considered public utility services that cover the entire population of urban areas, services that are creating an impact on urban migration phenomenon. The research is a quantitative one, involving both collected information and statistics. The results indicate a relation between public services and urban migration phenomenon, exploring mid-term effects. Certainly there are additional elements that create impact on urban demographics and some of these are decisive in emerging urban migration, but for sure public services are having a clear influence.*

**Keywords:** *public management, public services, urban migration, demographic phenomenon, urban shrinkage, public policies, urban-rural migration.*

**JEL classification:** J13, I25.

## **Introduction**

Public administration is a major factor that influences many areas within every community on a daily basis. The classic public management process aimed at providing as many public services as possible and also targeting as many citizens as possible (Negulescu, 1925), and managing three common areas (Iorgovan, 2002) despite geographical or historical positioning: justice, public security and national defense. Bearing these concepts in mind, the new public management process is having some different goals, considering how some authors are analyzing this

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topic. While new public management is focused on how accountability is designed in accordance with modern requirements, there occurs a lack of attention on how urban migration creates impact on community's sustainability development (Pfiffner, 2004). There are some different categories of public services, as some of them are provided directly by the local authorities and central government, while other are provided by private entities (Tomkins, 1987). The impact of these services on demographical phenomena is largely debated as this topic is gaining interest in terms of private investments. One demographic effect developed by public policies might be human migration. Human migration is considered to be "*the movement of people from one place in the world to another for the purpose of taking up permanent or semi-permanent residence, usually across a political boundary*" (NG, 2005). According to UNFPA (2014), in 2013 the world faced 232 mil. international migrants, mostly determined by domestic social and labor environment, *war conflicts, persecutions, extreme weather conditions and explosive growth of cities*. All these are factors that involve dramatic structural changes within a country, in case of massive migration. Also, another result of ineffective public policies might be a negative natural increase rate, determined by poverty, lack of education and even abusive regulations. In terms of economical and welfare indicators, human migration is having a double consistence: on the one hand, it generates an economical increase when migration import cheap workforce, on the other one, it is considered *harmful* for national economy when local high-skilled workforce is leaving the country. In order to prevent this workforce drain, both central and local public managers have to engage their institutions in providing welfare, social weal and effective public services. This paper analyzes only the impact of public services on urban migration, using a quantitative approach, mostly for revealing how some major public services induce this social movement.

### **1. Public services and urban migration: theoretical frame**

A largely accepted definition (Rivero & Valine, 1998) for the idea of *public service* claims that this is "*a form of administrative action by which a public person assumes to fulfill a public and general need*". Public services might be perceived as a commodity delivered to citizens, granted as public customers. In order to provide permanent welfare in a sustainable manner to citizens, public managers are constrained to embrace private corporate practices, as competitive intelligence toolkits are. It is widely accepted that public services should serve every tax-payer within a community, as this is one of the most important financing resource in this sector (Rosen, 2002). Despite a large number of public requests, claimed by citizens and private companies, local and central authorities have to manage a limited budget, based on a hierarchy of expressed needs. Since financial resources are limited for public institutions, money is a crucial topic (Rosenbloom & Kravchuk, 2002). In mostly every scenario, it is unlikely to own such an abundant financial resource that would fulfill every request, that's why public managers should take into consideration a hierarchy of these requests. In order to

encompass a larger part of population, public managers tend to answer to those requests having the highest frequency among population. Unfortunately, urban migration is a result of not answering to these requests, but often it is not considered as an issue that might be fixed through public services. Urban migration is usually considered to be an effect caused by various factors: low incomes (Friedrichs, 1993), high local unemployment and inflation rates, lack of private investments, corruption and poverty, environmental aspects (Williams & McMillen, 1980), inequality gap among urban-rural living standard (Young, 2013), increased criminality (Jibowo, 1992). It is also proved that effective transportation and communication services might influence urban-rural migration (Brown & Wardwell, 1980), as well as other services.

It is generally accepted that *rural-urban migration* (rural residents moving to urban areas) is determining effects such as overpopulation among cities (Gimba & Kumshe, 2012), pressure on public services or higher competition for the same number of jobs, especially in terms of expected salaries (Todaro, 2003). As talking about rural migrants to urban areas, one side effect derived from this migration consists of carrying away their consumption power to urban areas (Adewale, 2005), emphasizing the lack of jobs among communities. On the other side, it creates some benefits for those urban areas where well-skilled workforce is coming, since employers may cut some costs by hiring ex-rural workers. Actually, rural-urban migration is the most frequent internal phenomenon in terms of demographic changes, since most of the cities are pulling rural inhabitants through higher income opportunities or improved health systems (Mabogunje, 1970). Basically, rural-urban migration is following the global trend of cutting industrial costs, since the economic growth is not having a spectacular comeback after latest financial crises. In this regard, every large metropolitan area is gaining benefits by attracting cheap workforce mainly for industrial manufacturing companies.

Even though large private industrial companies might benefit from *importing* cheap workforce, urban agglomerations might not be prepared for assimilating a large number of rural migrants, especially in terms of housing and public services. This is the scenario that might expose the break-even point for public managers in terms of balancing the urban population, break-even that is having the capability to trigger the reverse process, namely *urban-outside migration* (urban residents moving outside metropolitan areas). Regarding this process, urban migration is causing both positive and negative effects among an urban agglomeration, sometimes dependent on the destination considered when migrating. Destinations chosen to migrate are various, based on particular needs and requirements of each urban resident. According to widespread opinions, urban migrants are categorized in: urban-urban (Gang & Stuart, 1996; Bilsborrow & Carr, 2001), urban-rural and urban-abroad (Rees et al., 1996). For instance, when migrating to another urban agglomeration, it is widely considered that an urban migrant will contribute to the economic growth of the city of destination, creating a short-term loss for the left city. Even more the impact will increase, should the urban migrant choose an abroad destination, since the worker's skills will be

assimilated to a foreign economic advantage, and this seems to be a rule for every country that faces massive active migrants (OECD, 2014). As talking about urban-rural migration, in many EU regions it has been proven (Rudzitis, 2012) that this phenomenon is determined by environmental issues, climate, crime rate or pace of life, in spite of employment or income indicators.

The type of migrants is another criterion considered when analyzing urban migration, since these migrants might be categorized into *productive* and *consumptive* (Zuiches & Brown, 1978). While *consumptive* migrants are carrying with them mostly the impact on retail trading, the *productive* ones are moving both the consumptive and lucrative contribution. On a long-term basis, productive migrants are negatively impacting urban agglomerations, mainly on private companies' financial results, since these are compelled to train new employees for similar business processes. More than this, a massive *productive* migrants leak is causing a chained economic effect, including *fiscal loses* and *occupational distortions* (Docquier, 2014). Related to this classification of urban migrants, we might assume that *productive* citizens are those who appraise the quality of public services within daily activities, since they are contributing with taxes for operating these services. Thus, in *productive* migrants' case, public services might play an emphasized role in deciding to leave a city.

In addition to this approach, some authors (Jedwab et al., 2014) designed the term "*urban push*", as an effect of growing cities and congestion, determining a *pushing* effect on city's boundaries, both as a geographic and demographic meaning. According to these authors, "*urban push*" should not be translated as pushing active urban workers outside a city, but seizing limitrophe areas around. Therefore, this effect is not necessarily a harmful one, instead it might be considered a benefit for those urban agglomerations where congestion is *asphyxiating* households and traffic. The main elements included within this effect are insufficient-living area, limited access to healthcare systems, lack of potable water and sanitation facilities (Mohapi, 2009). All these are part of public services systems, impacting standard of living on mid-term and even long-term (Thet, 2014), causing mutations on natural increase, life expectancy and financial instability. At once with these urban *push* factors, rural *pull* factors might determine this urban migration phenomenon, for instance "social ties of long duration", "high quality of life", "norms of neighborliness, self-help and reciprocity" (Phillips & McLeroy, 2004).

In both academia and public policies, there is still a dilemma if urban migration is a clearly positive or negative phenomenon, since there are both benefits and losses around it. As mentioned above, switching a congested city with its limitrophe area it might be considered a positive effect, as long as the migrant is actively involved in productive activities, since the migrant is still working in the city. Reducing the pressure on public services might also be a positive effect, along with housing issues. On the other side, urban migration outside metropolitan area is clearly considered as determining negative impacts on local economy in the scenario where both *consumptive* and *productive* citizens are leaving for a mid-

term or even long-term. This paper aims at revealing if in Romania there exists a relation between public services quality and urban migration phenomenon, as this is a factor that trigger demographic phenomena.

## 2. Case study: Romania

One relevant indicator describing urban competitiveness is considered the population number within an urban agglomeration (Saasen, 2009). A significant proportion of people living in urban areas are active therefore are constantly contributing to payment of taxes. Their migration becomes a real problem in terms of competitiveness regarding urban agglomerations in Romania, as economic and social development are able to attract high-skilled workers from other cities. Besides this, as talking about Romania, urban migration might be caused by a lower quality of life comparing to the EU15 countries. Joining the EU in 2007 along with Bulgaria, three years later comparing with A10 countries (Ruist, 2013), Romania did not implement a rigorous policy for countervailing migration (Teodorescu, 2011), whether it is urban, rural or abroad. Even more, Romania promoted the working-abroad habit mostly among rural population, although it was covered in an unofficial form. Economically, this practice brought bilateral benefits for both Romania's workers and EU15 private companies, since these migrants were characterized by low costs and appropriate skills. The very first 3 years after accessing the EU might be described by a massive migration of labor, reaching a peak of more than 10% of total population working abroad (Boboc et al., 2011), and a massive brain-drain among young population (Goschin et al., 2013). This last category of population, namely active youth and fresh graduates, predominantly high skilled and trained in various fields (technical and engineering, medicine, education, chemistry, physics, industrial design etc.) are triggering a more emphasized negative impact on national economy (Boncea, 2014), should they not contribute at all by taxes and incomes, as most of them do not return home for a long time. More than this, most of this category of migrants is leaving urban areas since there are located the largest universities, enhancing the impact of urban-abroad migration (Massey & Arango, 1994) and determining adjoining negative economic effects on mid-term. The urban brain-drain registered in Romania within the analyzed period is still causing further impacts, as the governmental policies cannot countervail the phenomenon by public services or financial incentives for those who intend to leave a city.

In this study we identified a number of public services that create impact on urban population migration, public services that are fulfilling vital human needs. The analysis was carried on national level, based on the statistical information provided by the National Statistics Institute. Public services analyzed within the research are: *gas distribution, green areas, public transportation, potable water distribution, public roads infrastructure and wastewater network*. When selecting these six public services, we took into consideration both Maslow's classic pyramid (Maslow, 1943) – for the first three public services, and one updated Maslow hierarchy (Kenrick et al., 2010) – for the last three. Included in the first

category, the length of drinking water distribution network (measured in km), the length of wastewater network (measured in km) and the length of the gas distribution network (measured in km) are providing a vital basis for inhabiting an urban area, as both provide necessary utilities such as drinking water, heating facilities, energy or sanitation facilities. The second category of public services analyzed in this paper consists of providing green areas (measured in ha <hectares>), public transportation (number of vehicles) and the length of public roads infrastructure (measured in km). Once first category of public services are fully provided by local authorities, this second category fulfils an adjacent type of public needs, linked to welfare.

The research starts from the assumption that public services lead to a certain extent the phenomenon of urban migration in Romania, as one of the factors that triggers associated prerequisites. By analyzing available information provided by the NIS (National Institute of Statistics) and MRDPA (Ministry of Regional Development and Public Administration), we included aggregated information regarding all eight developing counties from Romania. According to the NSRD (National Strategy for Regional Development 2014-2020), the issue regarding public services is analyzed in a detailed manner, focusing on the importance of *gas distribution, potable water network and drainage systems* (MRDPA, 2013). These public services are linked to the urban sustainable development up to year 2020, as indicated in the NSRD. Basically, the NSRD harmonize the national legislation (OG, 2001; 2006) with the Europe 2020 Strategy (EU Commission, 2010) and official reports (EU Commission, 2013; 2015) regarding demographic changes and sustainable development, including the role of public services. We stressed in our research all six public services through two regressions, an extended one and a restricted one, in order to receive an accurate set of results. Eventually, we opted to include four public services that are fulfilling both critical and EU-specific public needs, since Romania is still working to gain a full integrated EU member states (Molle, 2012).

These services were selected as independent variables for the model, assuming that urban migration phenomenon is impacted by these factors as well. For some public services, the extent of their geographical coverage is practically a key factor in measuring quality, therefore gas distribution network, public roads and green areas are good examples on this regard. The analysis describes a 14 years range, namely the years 2000-2013, considering that this range provides an adequate view for estimating the relation between urban migration and public services. In order to test the impact of public services on urban migration, a multiple regression was performed on a balanced panel with 112 observations.

### ***2.1 Extended regression***

The very first regression model includes all six public services aimed by the initial hypothesis, as each of them are considered to create impact on urban migration. In the following paragraphs, the phenomena is stressed through the

extended regression describing a wider view on how public services impacts urban migration phenomena, according to recorded statistics. In the first hypothesis, all six public services might create a significant impact on migration as general demographic phenomenon, and particularly on urban migration, thus the  $H_0$  consists of that *all six public services\* are significantly influencing urban migration phenomena.*

\* all six services above mentioned, analyzed within the extended regression

$$U_{mgr} = \alpha + \beta_1 \cdot X_1 + \beta_2 \cdot X_2 + \beta_3 \cdot X_3 + \beta_4 \cdot X_4 + \beta_5 \cdot X_5 + \beta_6 \cdot X_6,$$

where  $U_{mgr}$  = urban migration,  $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$  are regression coefficients for independent variables  $X_1$ = gas network distribution length,  $X_2$ = green areas surface,  $X_3$ = public transportation vehicles,  $X_4$ = public roads infrastructure,  $X_5$ = wastewater network and  $X_6$ = potable water network length, recorded for the whole analyzed period, namely 2000-2013. Therefore, the regression equation is described as follow:

$$U_{mgr} = 22420.7 + 6.340101 \cdot Gas - 4.359763 \cdot Green - 10.07583 \cdot PTrans + 4.916676 \cdot PRoads - 0.411440 \cdot Wastw - 2.146282 \cdot Water$$

Related to this regression, main indicators are concluding to a valid model for the assumed hypothesis, since the coefficient of determination R-squared values 0.83 and the adjusted R-squared is 0.81, this explaining in a relevant percentage the evolution of urban migration through all six independent variables. The existence of autocorrelation among the independent variables is expelled by Durbin Watson value, namely 1.964, along with an approximate 38.47 F-statistic value for entire extended regression (more details in *Appendix 1*). Probability of F statistic is 0, meaning the model has an adequate design for this  $H_0$  hypothesis, with a clear influence on dependent variable. However, even these results are positive for the whole study, according to Table 1, not all independent variables are significant for a 1% confidence level, since the *length of public roads' infrastructure* and the *length of wastewater network* are recording a higher value than 0.05, determining the construction of a new regression analysis, a restricted one this time (explained within the following section).

**Table 1 Extended regression coefficients**

	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-Statistic</b>	<b>Prob.</b>
$\alpha$	22420.70	9966.033	2.249711	0.0267
$\beta_1$	6.340101	1.666394	3.804682	0.0002
$\beta_2$	-4.359763	1.952909	-2.232445	0.0279
$\beta_3$	-10.07583	3.604985	-2.794970	0.0062
$\beta_4$	4.916676	3.065679	1.603781	0.1120

	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-Statistic</b>	<b>Prob.</b>
$\beta_5$	-0.411440	1.924837	-0.213753	0.8312
$\beta_6$	-2.146282	0.807270	-2.658692	0.0092

As a brief interpretation for public roads variable, it might be considered that urban population is leaving large cities once public roads infrastructure is expanding, determining an increased number of cars purchased by local population, attracted by adequate driving conditions. Once this urban fleet increases, issues such air pollution and congested roads (Harrington & McConnell, 2003) cause a generalized discomfort among population. The positive relation regarding the relation between *public roads infrastructure* and urban migration is confirmed by a short list of previous studies both direct and indirect related on this topic (Harvey & Clark, 1965; Konrad, 2003), while a negative relation between building public roads and urban population growth is quite wider expressed in other papers (Blonk, 1979; Hart, 1993; Boarnet & Chalermpong, 2001; Gonzalez-Navarro & Qunitana-Domeque, 2010; Jalan & Ravallion, 2010). Additional explanations for Romania's distinct case consists of high international migration faced by large urban agglomerations simultaneously with major road infrastructure building projects, or the fact that some large cities assimilated limitrophe small villages and cities, thus expanding the official road infrastructure length. As about wastewater network, the relation with urban migration is negative, meaning that for new wastewater pipes, population is not willing to leave a city. Besides a logical interpretation on this effect, other studies are confirming that wastewater and sewage systems, along with selective waste recycling infrastructure do encourage citizens to be part of local communities, should there be recorded an improved quality of life (Burian et al., 2000; Parkinson & Tayler, 2001; Altansukh, 2012; Suriyachan et al., 2012; UN Water, 2015). Wastewater management is also a key part of sustainable urbanization process, should sewage systems provide a basic sanitary facility among urban areas. Therefore, wastewater management is deeply analyzed when designing public policies and programs, public managers facing even international enforcement compulsory decisions in order to align practices related to this topic.

The non-significant level for these variables is a result of non-linearity effect determined by public policies regarding public roads infrastructure and environment, both at a national and local level. According to the evolution of public roads and wastewater infrastructures, the trend is irregular for the analyzed time-range, pointing out lacks among public management process, underfunded institutions and projects, prioritization of other public projects, all of these derived from an embattled political evolution during 1990 – 2013 and still ongoing. In order to maintain an accurate model, we decided to remove these two independent variables and building a restricted regression therefore, even though other relevant research and statistics concluded a different relation regarding public roads and wastewater networks. Concluding this first regression, the  $H_0$  hypothesis is not confirmed, thus proceeding for a restricted regression.



## 2.2 Restricted regression

Considering the same regression calculation type with a balanced data panel, we will be following the model that leads to the most relevant results, as all previous independent variables with a statistical significant coefficients are included nowhere. Unlike the extended regression, all independent variables are having a statistical significant value at a 1% confidence level. As indicated below, the regression model is providing a different interceptor value, a higher one, caused by a different distribution of significant variables. The coefficient of determination R-square is 0.83, and the adjusted one is 0.81, which means the independent indicators extensively explains urban migration within the analyzed period. Basically, the dependent variable *urban migration* is explained through the independent values with a high confidence level. An approximate 44.95 F-statistic value ensures a valid model for this restricted regression, as well as the probability of F statistic which is 0. Also Durbin Watson coefficient is 1.88, which denies the existence of autocorrelation between the independent variables (more details are highlighted in *Appendix 2*). Further we indicate the regression model, followed by Table 2 where are described the regression's coefficients.

$$Y = \alpha + \beta_1 \cdot X_1 + \beta_2 \cdot X_2 + \beta_3 \cdot X_3 + \beta_4 \cdot X_4,$$

where Y = urban migration,  $\beta_1, \beta_2, \beta_3, \beta_4$  are regression coefficients for independent variables  $X_1$ = gas network distribution length,  $X_2$ = green areas surface,  $X_3$ = public transportation vehicles and  $X_4$ = potable water network length, recorded for the whole analyzed period, namely 2000-2013. Therefore, the regression equation is described as follows:

$$U_{mgr} = 34329.21 + 7.365193 \cdot Gas - 5.116401 \cdot Green - 10.71675 \cdot PTrans - 1.889464 \cdot Water$$

According to this equation, it is easily observed a negative relation between analyzed services and urban migration, excepting gas distribution. As mentioned in the general description of the research methodology, all these four variables are representative for both mandatory public services and welfare of citizens. After removing two independent variables, the model is maintaining initial orientation regarding current variables, as illustrated in Table 2.

**Table 2 Restricted regression coefficients**

	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-Statistic</b>	<b>Prob.</b>
$\alpha$	34329.21	6465.135	5.309898	0.0000
$\beta_1$	7.365193	1.544920	4.767363	0.0000
$\beta_2$	-5.116401	1.864314	-2.744387	0.0072
$\beta_3$	-10.71675	3.419703	-3.133825	0.0023
$\beta_4$	-1.889464	0.737596	-2.561653	0.0119

After analyzing these indicators and the impact they have on urban migration were identified as follows. Reducing the number of kilometers of water distribution infrastructure in urban population migration determined almost 0.52 points in absolute terms. This means that every two km. constructed, it creates prerequisites for migration from urban to reduce the size of a 1%. The diminishing of water distribution network as a percentage might also occur one with urban settlements increase. As about public transport, this is another important point in competitive intelligence equation in terms of public services, as the econometric model shows an inverse relationship between the number of vehicles for public transport and urban migration. The coefficient for this variable has a value of -10.71, which means that a 10% reduction in the number of vehicles causes a migration of 1%. Related to variable "green areas", there is also an inverse relationship with urban migration coefficient with a value of -5.1. In this context, the reduction of green spaces with a 5% lead to exaggerated urban migration by 1%.

### **Conclusions**

The paper exposes a model that incorporates both conceptual and statistical approaches in terms of public services' impact on demographic phenomenon, as well as related to current social evolutions among Central and Eastern Europe. Our paper stresses an econometric model that incorporates two different theories in terms of public needs and services, thus creating a relevant approach on urban migration phenomenon, namely classic and contemporary Maslow hierarchy. The author agrees on the fact that major economic issues are causing urban shrinkage and that there is a large debate on these factors' impact on life quality and standard of living. The central concept of this paper is that there is an additional insight that enhance this urban migration, consisting of the quality of public services. For Romania's case, urban migration might firstly be considered an effect of public policies, instead of a cause for other demographic phenomena. The initial hypothesis is re-confirmed within Romania's case, should there be a significant statistical result of the restricted regression. Unexpected is the fact that those public services related to contemporary Maslow hierarchy are determining the most emphasized migration effect. This might be caused firstly by the fact that in Romania there is not a lack of basic public services and facilities among important urban areas.

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