

Summary of professional accomplishments

1. Name and surname: Iwona Kantor-Pietraga
2. Diplomas and academic degrees held

Iwona Kantor-Pietraga was granted a Master's degree in geography at the Faculty of Earth Sciences of the University of Silesia in Katowice in 1992.

Iwona Kantor-Pietraga, M.A, was granted a PhD degree in Earth Sciences in the scope of Geography in 1998. The title of the PhD dissertation: "The Diversification of Population Structures in the Towns of the Katowice Voivodeship in the Period 1978-1988."

3. Information regarding hitherto employment in scientific/ artistic units.

Iwona Kantor-Pietraga, PhD, has been employed at the Department of Earth Sciences of the University of Silesia as a senior lecturer since 2012. In the period 1999-2012 she worked at the University as an adjunct. Before, in the period 1992-1999 she had been employed there as an assistant.

4. Expedient achievements* according to Art.16 Paragraph 2 of the Law dated 14 March 2003 regarding academic degrees and titles as well as degrees and titles in Arts (Journal of Laws no. 65, Item 595, with further amendments):

a) (author/authors, title/titles of publication, year of publication, publisher),

Iwona Kantor-Pietraga, The Systematics of the Process of Depopulation of Towns in the Area of Poland from the 19th to the 21st Centuries, 2014, University of Silesia Publishing House, Katowice, pp. 264.

b) presentation of the academic aim of the dissertation and drawn conclusions as well as their potential application

The process of depopulation of towns is one of the most common phenomena that accompanies urbanization. The loss of urban population is also an important element of various socio-economic phenomena considered from the point of view of anthropogeography. The depopulation of towns has different determinants and consequences, and above all, different trajectories. Depopulation occurs in large, medium and small towns. It happens in towns with diverse economic functions, spatial and functional systems and social structures. These remarks apply to urban centers around the world, including Poland.

A complicated arrangement of elements making up the overall nature of the process of depopulation in Poland over the past 200 years was the main argument for this attempt to systematize it. Due to the lack of scientific works with a similar purpose, as well as due to the significant dispersion of facts regarding the phenomenon, a systematic attempt of urban depopulation was not easy. Also a multiplicity of concepts that directly or indirectly relate to the phenomenon of population loss and their interpretation posed a challenge.

The problem of urban depopulation is undertaken in the study from the standpoint of population geography as well as historical demography and urban geography. The specific scope of research in this study is an attempt to systematize the phenomena of population decline (depopulation) and its consequences in towns located on the contemporary territory of Poland during the period from the 19th to the 21st centuries.

The subject of research is contained within the issues of population geography. However, population issues in their dynamic depiction is discussed within historical demography. The study therefore focuses on the issues of population movement and spatial structures of population considered from the point of view of the demographic past of Polish lands.

The third field of research this thesis refers to is urban geography, especially the part which addresses the issues of demographic development of urban centres.

The realization of the basic aims of the book, namely an attempt of typology of Polish towns characterized by depopulation, as well as systematics of the process of depopulation of towns, was based on the fulfilment of two complementary purposes.

The first was to characterize and explain the phenomenon of depopulation of towns in contemporary Poland in the period 1810-2010 and to present this process against general demographic development trends of Polish towns during this period. The second objective was, however, a reference to the issue: both the contemporary (1990-2010) decline of urban population as well as its projection in the near future (to 2035). Concerning the latter, indicating the multifaceted consequences posed by the analysed process.

The phenomenon of urban depopulation, due to the high variability of borders in the nineteenth and twentieth centuries and the contemporary context of the phenomenon as a challenge for the near future are discussed in relation to the present (2014) territory of Poland. A long period of the analysis of the depopulation phenomenon conditioned its division into several sub-periods (1810-1918, 1919-1939, 1939-1945, 1946-1989, 1990-2010). An important element of the study was also a reference to projected population changes in Polish towns by 2035.

In the development of the depopulation phenomenon of towns in the area of Poland in the period from the 19th to the early 21st centuries, attention was drawn to two aspects:

1. social (family model, female fertility) model of life, referring to the theory of demographic transition,
2. economic aspect (transition from the agricultural sector and agro-services, dominating in the economic base to the industrial sector in the nineteenth century and the service sector at the end of the twentieth and twenty-first centuries), referring to sector changes in economy.

Given the fact that both aspects of the process of depopulation of towns have a primary genetic basis, it should be noted that their strong interaction and synergy, which began in the late twentieth century, have caused a dual image of the demographic development of towns, which is reflected in the fact that there are and will be simultaneously existing such towns:

- a) decreasing in numbers, but showing an increase in population,
- b) increasing in numbers depopulating centres.

This duality is a constant and systemic component of urban development, only its proportions change. From the contemporary perspective, it should be emphasized that at the turn of the 20th and 21st century, there has been the largest in the history of Polish lands systemic and long-term change in the ratio between the above mentioned types of towns (experiencing population growth and depopulating).

In light of the research aims outlined above, and referring to the analysed, over 200-year history of Polish towns, the research problem was formulated in the following way: Why did urban depopulation have a similar character in the 19th century and in the contemporary period? The validity of this question results from the fact that in the first period, depopulation was only conditioned by one stimulant (economic), while in the second, by two stimulants (economic and social).

An attempt to solve the problem posed in the thesis of the research began with a review of concepts relating to key issues of urban depopulation. At this stage of the study, the multiplicity of depictions that define the same issue was highlighted and, on the other hand, the lack of concepts, which would explain some of the other geographical phenomena.

The first chapter of the study discusses the specifics of materials and sources, and the state of hitherto research. Regarding the latter, the multi-threading research on the process of depopulation in its dynamic depiction in Poland was highlighted. Aspects of research focused on issues such as shrinking cities at the turn of the 20th and 21st century, the depopulation of villages and rural regions in the second half of the 20th century, degradation and stagnation of small towns in the 19th and early 20th century and finally the social, economic and demographic conditions of natural population decline and emigration. On the other hand, the lack of a broader scope in terms of a synthesis of this phenomenon was highlighted.

With reference to the above facts, it was decided to develop the concepts of urban depopulation in the form of a dictionary. Its goal was to organize and complement the range of terms relating to key issues of urban depopulation. The dictionary covers over 40 topics directly or indirectly related to the depopulation of towns. Issues (processes, phenomena, structures) conditioning the emergence and evolution of the phenomenon were indicated, as well as those constituting its consequences. Some issues in the dictionary are the author's own, and their wider explanations are found in following chapters of the study. The dictionary under development is a separate (second) chapter.

Another part of the study was devoted to conditions and mechanisms of depopulation of towns in Poland. Two main groups of conditions and mechanisms were pointed out. At first, they were systemic in nature whereas secondly, they were incidental. In the group of conditions and mechanisms of the system, a division was made into ones having a long-term effect and ones of short duration.

Due to their universality, the most important conditions identified were the systemic factors with a long-term effect. Their background was social or economic. In the first case, the explanation was primarily with theories of first and second demographic transition,

highlighting the role of socio-demographic phenomena in the population decline conditioned by variables of natural movement (Lesthaeghe, 1991; Kotowska, 1999; Demographic processes, 2010).

In the latter case, the background explanation were the changes of basic functions of the economic base of Polish towns, which were reflected in:

- limitation of the role of the services and commerce in urban development of the 19th century for industrial functions, mining and rail-related transport,
- limitation of the role of the manufacturing sector for services in the 2nd half of the 20th century and in the early 21st century (Kostrowicka, Landau, Tomaszewski, 1978; Schumpeter, 2009).

In the case of systemic conditions on economic grounds referring to the area of Poland, an important role of migration was indicated. Taking into account the element of permanent migration of a small territorial range, a reference was also made to the concept of redistribution of population. Explanations of W. Zelinsky (1971) and J.Z. Dzieciuchowicz (1995) were considered right. In turn, the model of urban development by Klaassen and Paelinck (1979) was recognized as an alternative explanation in terms of spatial redistribution of demographic (and spatial) potential of towns. Joint authorship studies, in which the author participated (including Krzysztofik, Runge, Kantor - Pietraga, 2011, 2012a) regarding the process of depopulation and urban shrinkage in the Silesian Voivodship do not fully confirm the existence of a dynamic relationship in this region: urbanization - suburbanization – de-urbanization - (re-urbanization). The study presents an alternative model, indicating a transition of an urbanization phase into a simultaneous (limited) suburbanization phase and de-urbanization. This model is typical for the Katowice conurbation and takes into account the phenomenon of de-fragmentation, long-distance movements or a complete disintegration of the previously existing demographic, spatial and economic potential here.

The short-term conditions and mechanisms of the system were indicated as those that result from acts of war and their immediate consequences. Periods of war or large-scale territorial and social impact uprisings are defined as specific (critical) stages of the socio-economic and political evolution in a given country or on its larger territory. In reference to the adapted period and area of the study, the role of world wars and the January Uprising in the Polish Kingdom, were indicated as major systemic and short-term determinants in the processes of depopulation of Polish towns.

Stressing, in turn, the role of incidental conditions and mechanisms in the depopulation of towns the author used the existing typologies of the phenomena having a

direct influence on this phenomenon (McLeman, 2011; Tyszkiewicz, 2014). Attention was paid to both factors and environmental hazards as well as to selected anthropogenic factors. In contrast to the systemic determinants, the incidental factors had a clearly random impact, but especially in the 19th and early 20th century, they could have a significant regional-scale participation in the processes of depopulation of towns.

The course and trajectories of the depopulation process of towns in Poland were discussed in chapter four. Due to the long period of research, covering over 200 years, the depopulation of towns was finally discussed within the five sub-periods: 1810-1918, 1919-1939, 1939-1945, 1946-1989 and 1990-2010. This part also contains a section on the future progress of the phenomenon in the area of Poland. The empirical basis for this chapter was a CSO demographic forecast until 2035. The issue of urban depopulation was discussed in the sub-sections in such a way so that the essential part of each is preceded by a concise synthesis of a general demographic background of demographic processes.

The description of the phenomena of urban depopulation in different sub-periods included clarification from preceding chapters. That is, the definitional ranges of some dictionary terms were extended, and specific examples of various conditions and mechanisms of urban depopulation were indicated.

The next three chapters of the study are of an explanatory nature and have focused on the key issue of the systematics of depopulating cities. Synthetic case studies devoted to each of the presented types of cities complemented the explanations. These chapters also aimed to extend the definitional scope of terms presented in the glossary of concepts and focused on the phenomena of depopulation and urban shrinkage.

The first of these chapters (the fifth chapter respectively, in the book) was devoted to the depopulation of cities regarded from the point of view of their demographic potential. The essence of the typology was to answer the question of the actual scale of the demographic loss, and mostly, if this phenomenon actually took place (in retrospect). Therefore, a division was made into cities with ostensible depopulation and those with real depopulation. The problem of ostensibility in the process of urban depopulation was defined as a condition in which on a given territory there is no actual loss of population, while the administrative status of the area is subject to change. That means that it either divides into several new legal and administrative units, or it formally loses its urban status. In the first case, the separation of a city's former district (districts) is followed by a statistical loss of population. In fact, the number of residents of the current urban territory not only does not need to decrease, but it often increases. Similar trends may be experienced by a city, from which the district was

separated. Hence, the loss of population in a given area is statistical in nature and it solely results from legal and administrative decisions. It is not confirmed though by demographic processes that have taken place. The opposite of the indicated ostensibility of the depopulation process is the phenomenon of population decline occurring in reality. In this case, the entire territory of the city depopulates evenly. In the event of any administrative division of its former territory, all the newly created administrative units depopulate. Today, in reference to the depopulating cities, this model prevails in the majority of urban centers.

Another point of reference was adopted in the construction of a typology of depopulation process and it takes into account the relationship: urban centre - the region (chapter six). The basis of the proposed typology was a division into absolutely depopulating towns and relatively depopulating ones. An absolutely depopulating town is definitely such a place where the observed decrease in the population within its borders is accompanied by depopulation of the suburban area (urban region). This condition is an expression of a crisis of a town that is losing its ability to attract new residents, on the other hand, while not posing great opportunities for those already living there. The absolute depopulation mostly affects the post-functional (mainly post-industrial) centers, where the demographic and the socio-economic crisis also "affects" their immediate surroundings.

A more common model in Poland is the type representing relative depopulation. In this case, the observed decline of the city's population is accompanied by a population growth in its surroundings. This phenomenon is explained with the process of suburbanization and it primarily refers to large and medium cities in Poland. The author's research also reveals that it is noticeable in some smaller towns, for example, in selected spa towns and tourist resorts. The explanation for the relative depopulation is the existence of various barriers of development (social, spatial, psychological and image, infrastructure, economic, legal) existing in the city and relatively easy opportunities to overcome them in a suburban area, adjacent to the city. Relative depopulation, therefore, shall be seen as part of a territorial distribution of population, which is explained by, among others, the concept of P. Korcelli (1969) which defines the wave development of a city model and the model of J. Dzieciuchowicz (1995) devoted to spatial redistribution of population in an urban region.

The last chapter of the study was devoted to shrinking cities and the relationship of this phenomenon to the process of depopulation. The concept of shrinking cities in the last decade has clearly dominated the hitherto interest in the issue of urban depopulation, its causes and consequences. Increase in the applicability of the concept of urban shrinkage should be connected with its definitional supremacy over the concept of depopulation. The

second premise was the fact of a stronger emphasis of the cause-effect relationships of the observed population decline than in the case of the depopulation concept. Also, the starting point for the research was diverse in both cases. In the case of depopulation, the most important issue is the confirmed statistical population decline. In the case of urban shrinkage, issues, this is only one part of a wider background of explanations regarding the causes of the decline, its consequences, and the possibility of preventing the phenomenon or slowing it down.

Thus, according to the author, the term of urban shrinkage shall be understood as a multifaceted complex of factors and consequences that directly affect or are the result of a population decline recorded in the city. The proposed definition takes into account the very diverse definitional range of the concept, which is presented in academic works dedicated to it (such as Kowala-Stamm, 2006; *Shrinking cities ...*, 2006; Pallagst 2008; Rieniets, 2009; Bontje, Musterd, 2012; Fol, 2012; Krzysztofik, Runge, Kantor-Pietraga, 2012b, Martinez-Fernandez et al., 2012; Strykiewicz, 2013).

The problem of urban shrinkage in the study was discussed on the examples of cities representing different size categories. Therefore a large metropolitan city was looked at (Łódź), a big city of at least 100 thousand inhabitants (Sosnowiec), an average city of the size ranging from 20 to 100 thousand inhabitants (Ostrowiec Świętokrzyski) and a small town (Działoszyce). In each case, the essence of the phenomenon of shrinking cities was indicated, highlighting various determinants and consequences of this phenomenon. In the case of Działoszyce, even the threat to the town's existence was stressed, according to the legal and administrative criteria.

This chapter also identified other categories of towns that were facing a decline in population. Their condition in most cases can be explained both in terms of the phenomenon of depopulation, as well as shrinkage. The first group of towns are the degraded towns. Today, from a formal point of view, they are villages. They reached their legal and administrative status mainly due to the urban shrinkage process caused by a complex economic, political and demographic situation in the nineteenth century. By losing their hitherto economic basis, and not changing based on industrial activity, often becoming rural, and in many cases depopulating, they became urban centers, which were the first ones to have their municipal rights taken away. Deprivation of municipal rights was also associated with automatic deletion of such a centre from the statistics regarding towns and urban population (ostensible depopulation). Degraded towns were important elements in explaining the

specifics of urban shrinkage in demographic transformations of the Polish territory in the 19th century and the first half of the 20th century.

Another type of shrinking cities have been the cities functionally "already unnecessary". This pejorative term strongly indicates a loss of the city's existing city-forming functions, the decreasing importance in the regional arrangement of cities, and in some cases - mostly small towns - the possibility of a total disintegration of urban structures and changing the status to rural (legal and administrative degradation). In relation to the big cities, the study proposes a set of characteristics that determine their functional "redundancy".

The last category of towns whose current state is a consequence of urban shrinkage or depopulation are "abandoned" towns. Centres of this type are also known under the name of deserted or ghost cities. "Abandoned" towns are the subject of research for both geographical (cf. McLeman, 2011) and historical sciences (cf. Kiryk, 1980). In Poland, "abandoned" towns formally have the status of hamlets or uninhabited surveying districts. These towns, in geographical space, are the ultimate consequence of the of the urban depopulation process or in this case, even the desolation of the city.

An integral part of the book is a 50-page annex, which summarizes all Polish towns, which experienced the process of depopulation in the period from the 19th to the early 21st centuries. The table shows the scale of the percentage loss of population for each of the cities, with respect to the designated time intervals. Their frames were marked with the years: 1810, 1850, 1880, 1900, 1910, 1925, 1933, 1939, 1946, 1950, 1960, 1970, 1980, 1990, 2000, 2010.

In the part of the research of an empirical character, the annex constituted an essential element for the author's interpretation of the discussed phenomenon. This part of the study may also provide an important source for further research on demographic transformation of Polish cities, with particular attention to the phenomenon of depopulation.

Finally, based on empirical research and explanatory research, it was concluded that:

Depopulation of contemporary Polish towns should therefore be interpreted in comparison with earlier decades and centuries, as a phenomenon doubly determined in the context of the components of population growth. A town, in the process of real depopulation, does not actually have a possibility to significantly counteract population decline. Possible solutions only lead to deceleration of the urban depopulation phenomenon. They focus on urban policy aimed at stabilizing the level of socio-economic development of the city. The ultimate goal of these activities is, however, to create favourable conditions associated with an increase in the fertility rate and migration inflow. In addition, it was found that:

The proposed solution to the problem is as follows:

- A constant factor of depopulation in the history of Poland in the last two to three centuries was migration outflow. A relatively new and constantly evolving factor of urban depopulation in Poland is natural decline. Both of these elements are defined as conditions and mechanisms with a long-term effect.
- The index of migration outflow, including foreign emigration, has had a significant impact on the population decline in cities in the area of Poland. Its role at the turn of the 20th and 21st century is significant.
- The argument that migration outflow is a direct determinant of urban centre depopulation results from the fact that a given town must meet certain economic functions in the national system. Their disappearance, associated with a lack of succession of new functions causes a general disintegration of the town, whose most visible demographic consequence is migration outflow. The loss of urban population explained by economic factors defines an overwhelming portion of cases of shrinking cities. Positive economic development and expected improvement in economic and social conditions of living are the factors that in turn generate migration inflow.
- Natural decline, as a factor that stimulated depopulation, may be offset by the potential migration inflow. In most towns of contemporary Poland, a reverse situation does not take place. Natural decline has become widespread in recent decades in the country. Additionally, it tends to intensify. The above relativity of natural movement and migration movement must also be understood in terms of functionalism, i.e. in order to create favourable conditions of social existence, there must be certain favourable conditions for economic existence. In the long term, and in relation to towns, this principle shall be understood as a determination of demographic processes by migration flows. These can exist only in a situation of relevant conditions for economic development.
- Regardless of the factors having a systemic or long-term influence, such as a long-term migration outflow or a natural loss of population, in the geographic space there are usually other factors of regional or short-term relevance. Their existence should be understood as a direct interaction of human life on Earth, which is manifested by the relationship of natural and anthropogeographic nature. In the first case, the depopulation of the city is an effect of only natural factors, such as natural disasters. In the second case, these are social, economic or political factors, such as a change of borders. Some of them are difficult to classify, for example, a deserted town as a result of mining damages, where the natural factor coexists with the anthropogenic one.

- Incidental factors of urban depopulation are able to influence the hitherto development trends determined by factors of continuous and systemic influence, only when the former are specific moments of a closure of a certain stage (e.g., World War II lasting five years as a political, economic and social breakthrough, directly affecting spatial conditions of depopulation of small towns in 1945-1989). They do not have a long-term effect on the overall trends of depopulation phenomena.

- Adopting a functionalistic approach in explaining urban depopulation in Poland after 1810, it should be noted that the parallels between the general depopulation and demographic stagnation of large groups of towns in the 19th and at the turn of the 20th/21st centuries result from two types of transitions. First, the transition from an economy based on agriculture, trade and local services to an economy based on industry and development of rail transport. Second, the transition from an industry-based economy to an economy based on services and the increased role of individual road transport.

- In both the above mentioned cases, the economic transformation led to a spatial redistribution of population, which resulted in, depopulation of regions and urban centres that in that specific moment did not meet the expectations of the optimal location connected with the relationship of the place of work with the place of residence. While in the first period (the 19th century and the first decade of the 20th century) redistribution of the population was characterized by a relationship: village - town and had a nature of medium and long-distance movements (20-100 km and above 100 km respectively), at present (after 1990), the role of the relationship: town - village is increasing with a clear emphasis on short-haul movements (up to 20 km), referring to the general processes of suburbanization. The role of foreign emigration is constant and invariable.

- The phenomenon of depopulation of towns in Poland is an important and permanent part of general spatial and demographic processes. In the second half of the 20th century however, it transformed into a stage of shrinkage understood as a process genetically stimulated by both economic and social factors. Urban shrinkage perceived like that, is a negative phenomenon due to the fact that migration outflow is accompanied by natural population decline. Unlike the 19th and first half of the 20th century, towns and regions do not have the "demographic reserve", which was recorded as a surplus of births over deaths. With weak immigration processes, demographic changes in Polish towns will be clearly regressive in nature in the future. This means that urban depopulation will become a key element determining the totality of demographic processes referring to towns.

Index of literature quoted in the section of the summary of professional accomplishments devoted to the achievement resulting from Article 16, Chapter 2 of the Law dated 14 March 2003 regarding academic degrees and titles and degrees and titles in arts:

BONTJE M., MUSTERD S., 2012, Understanding Shrinkage in European Regions, *Built Environment*, Vol. 38, N°2 (June), pp. 153-161.

DZIECIUCHOWICZ J.Z., 1995, Demographic and Socio-economic Determinants of Spatial Redistribution of Urban Agglomerations Population. Example of the Łódź Agglomeration, University of Łódź Publishing House, Łódź.

FOL S., 2012, Urban Shrinkage and Socio-Spatial Disparities: Are the Remedies Worse than the Disease?, *Built Environment*, Vol. 38, N°2 (June), pp. 259-275.

KIRYK F., 1980, Failed Urban Locations, Urban Translations and Extinct Towns in Lesser Poland Until the Mid-Seventeenth Century, *the History of Material Culture Quarterly*, vol. 3, pp. 373-385.

KLAASSEN L.H., PAELINCK J.H.P., 1979, The future of large towns, *Environment and Planning A*, Vol. 11, p.1095-1104.

KORCELLI P., 1969, The Development of the Spatial Structure of Metropolitan Areas in California, *Geographical Works of IG PAN*, No. 79, PWN, Warsaw.

KOSTROWICKA I., LANDAU Z., TOMASZEWSKI J., 1978, Economic History of Poland in the 19th and 20th Centuries, *Książka i Wiedza*, Warsaw.

KOTOWSKA I.E., 1999, Second Demographic Transition and its Conditions, [in:] I. E. Kotowska (ed.), *Demographic Transformations in Poland in the 1990s in the Light of the Concept of the Second Demographic Transition*, SGH, Warsaw, pp. 11-33.

KOWALA-STAMM K., 2006, The Destruction of the City and the Importance of Social Initiatives for Consolidation of the Downtown Quarters of Detroit, *Geographical Review*, Vol. 78, Issue 4, pp. 537-560.

- KRZYSZTOFIK, R., RUNGE, J., KANTOR-PIETRAGA, I. 2011, Paths of Shrinkage in the Katowice Conurbation. Case Studies of the Cities of Bytom and Sosnowiec, Faculty of Earth Sciences, University of Silesia, Sosnowiec.
- KRZYSZTOFIK R., RUNGE J., KANTOR-PIETRAGA I., 2012a, Introduction to Governance of Urban Shrinkage. A Case of Two Polish Cities: Bytom and Sosnowiec, Faculty of Earth Sciences, University of Silesia, Sosnowiec.
- KRZYSZTOFIK R., RUNGE J., KANTOR-PIETRAGA I., 2012b, Governance of urban shrinkage: a tale of two Polish cities, Bytom and Sosnowiec, in:] P. Churski (ed.), Contemporary Issues in Polish Geography, Bogucki Scientific Publisher, Poznań, pp. 201-224.
- LESTHAEGHE R., 1991, The second demographic transition in Western Countries: An interpretation, [in:] K. O. Mason, A. M. Jensen (eds.), Gender and family change in industrialized countries, Oxford: Clarendon Press, pp. 17-62.
- MARTINEZ-FERNANDEZ C., KUBO N., NOYA A., WEYMAN T. (eds.), 2012, Demographic Change and Local Development: Shrinkage, Regeneration and Social Dynamics. Paris: OECD.
- MCLEMAN R.A., 2011, Settlement abandonment in the context of global environmental changes, *Global Environmental Change*, 21, Supplement 1, p. 108-120.
- PALLAGST K., 2008, Shrinking Cities. Planning Challenges from an International Perspective. [in:] S. Rugare, T. Schwarz (eds.), *Cities Growing Smaller*, Kent State University, Cleveland.
- Demographic Processes and Methods of their Analysis, 2010, KURKIEWICZ J. (ed.), Economic University in Cracow Publishing House, Cracow.
- RIENIETS T., 2009, Shrinking Cities: Causes and Effects of Urban Population Losses in the Twentieth Century, *Nature and Culture*, 4 (3), p. 231-254.
- SCHUMPETER J.A., 2009, *Capitalism, Socialism, Democracy*, PWN, Warsaw.
- Shrinking cities*, International Research, 2006, OSWALT P. (ed.), Vol. 1, Ostfildern: Hatje Cantz Verlag.
- STRYJAKIEWICZ T., 2013, The Process of Urban Shrinkage and its Consequences, *Romanian Journal of Regional Science*, Vol. 7, p. 29-40.

TYSZKIEWICZ J., 2014, *Historical Geography. Outline of Issues*, GiG Publishing House, Warsaw.

ZELINSKY W., 1971, The hypothesis of the mobility transition, *Geographical Review*, Vol. 61, N°2, p. 219–249.

c) Description of other scientific and research achievements

The research interests of Iwona Kantor-Pietraga, PhD focus on demographic issues. The essence of these interests is the issue of distribution and dynamics of urban population in territorial and spatial systems. The previously presented synthesis devoted to the issue of depopulation of towns in Poland, was a form of a summary of the author's hitherto research activity in both depictions.

Iwona Kantor-Pietraga, PhD has also discussed spatial and dynamic aspects of population problems in her publications. This subject, and especially the problems posed by negative consequences of the depopulation process and urban shrinkage, have also served as an important element of her organizational activities and involvement in institutional cooperation.

Publications on spatial aspects of demographic research were conducted in two fields of research. In the first one, the focus was on the inner-city depiction of demographic structures. In the second case, the primary research issues were spatial determinants and consequences of depopulation and urban shrinkage.

The first of these fields of research (demographic structures) includes a published monograph devoted to this issue whose focus is inner-city differentiations in the centres of then Katowice Voivodeship (*Kantor-Pietraga I., 2007, Spatial diversity of population structures in the cities of the Katowice Voivodeship in 1978-1988 University of Silesia*

Scientific Publishing House, Katowice). This publication systematized the inner-city structures of the examined centres, with reference to classical models in this regard – the cuneiform, coaxial and multi-centre ones. The essence of this study was to highlight these differences in the most urbanized region of Poland, in which, additionally, there was located a large number of cities of mining and industrial genesis. Their size structure was also diversified. Another study also referred to this issue (*Kantor-Pietraga I., 2010, Inner-city socio-demographic diversity on the example of Gliwice, Katowice and Sosnowiec, [in:] Processes and socio-demographic structures in the Silesia Voivodeship in 1988-2008, ed. J. Runge, Statistical Office in Katowice, Katowice, pp. 83-108*), which highlighted the continuation of the development of model demographic structures, following the system transition. An analysis of inner-city structures constituted the research issue for several other publications devoted to Bielsko-Biala, Tychy and, above all, Sosnowiec. A monograph of the latter city, in which I. Kantor-Pietraga, PhD, is the author of the section on the issue of inner-city demographic structures is in print.

The second research field of spatial depiction of the demographics phenomena in the author's scientific achievements is the issue of determinants and consequences of shrinkage and urban depopulation. Among publications on this subject, a significant part are those in the English language, including one publication having an impact factor and listed on the A list of the Ministry of Science and Higher Education (*Krzysztofik R., Runge, J., Kantor-Pietraga I. 2012, Paths of Environmental and Economic Reclamation: the Case of Post-Mining Brownfields, [in:] Polish Journal of Environmental Studies, Vol 21, No. 1, pp. 219-223*). This study identifies areas of the brownfields type as the most expressive elements of spatial development, the genesis of which is associated with the phenomenon of urban shrinkage. The purpose of the article was to identify the objectives of urban policy directed towards this problem, indirectly alluding also to the dynamics of the population of the city. Other important studies that relate to this issue include an article on functional derelict areas, constituting a consequence of multi-faceted urban shrinkage (*Krzysztofik R., Kantor-Pietraga I., Spórna T., 2013, A dynamic approach to the typology of functional derelict areas (Sosnowiec, Poland), [in:] Moravian Geographical Reports, vol 21, 2, pp. 20-35*) and a chapter in a monograph (*Krzysztofik R., Runge, J., Kantor-Pietraga I., 2012, Governance of urban shrinkage: a tale of two Polish cities, Bytom and Sosnowiec, [in:] Contemporary Issues in English Geography, P. Churski (ed.), Bogucki Scientific Publishers, Poznan, pp. 201-224*).

The second aspect of demographic research conducted by I. Kantor-Pietraga, PhD was the issue of dynamics of population of cities and their networks, in a broad meaning. These studies have focused on the analysis of demographic phenomena, both in proportionally short periods of time, covering several decades (e.g.: *Kantor-Pietraga I., 1994: Urbanization transformations in the Bielski region, Statistical News, Central Statistical Office, Warsaw, book 10, pp. 27-32*; *Krzysztofik R., Runge, J., Kantor-Pietraga I., Spórna T., 2011, Characteristic Features of Urbanization in the Area of the Silesian Province (Poland) at the beginning of the 21st Century, [in:] Sociologie Romaneasca Journal, vol IX, No. 3, pp. 56-66*), as well as longer periods covering several centuries (*Kantor-Pietraga I., Krzysztofik R., 2009, Demographic development of towns in the area of the Silesian Voivodeship from the 13th to the 21st centuries, Faculty of Earth Sciences, University of Silesia, Sosnowiec*). This problem was also discussed in two different depictions - a statistical and explanatory analysis of population dynamics [the issues of population growth and loss, depopulation processes] (*Kantor-Pietraga I., 2005, Changes in real growth of the population in North Rhine-Westphalia, Statistical News, No. 10, Central Statistical Office, Warsaw, pp. 91-105*) and the explanatory depiction focused primarily on the issue of urban shrinkage (*Krzysztofik R., Runge, J., Kantor-Pietraga I. 2011, Paths of shrinkage in the Katowice conurbation. Case Studies of Bytom and Sosnowiec Cities, Faculty of Earth Sciences, University of Silesia, Sosnowiec* and *Krzysztofik R., Runge, J., Kantor-Pietraga I., 2012, An Introduction to Governance of Urban Shrinkage. A Case of Two Polish Cities Bytom and Sosnowiec, Faculty of Earth Sciences, University of Silesia, Sosnowiec*).

Iwona Kantor-Pietraga, PhD in her scientific activity has undertaken issues related to the social geography of cities as well. In this regard, the subject of her interests were problems of large and medium-sized cities (e.g.: *Kantor-Pietraga I. 1994: Living conditions of the Polish population in the light of selected health care indicators in 1975-1989, [in:] Selected issues of socio-economic geography, ed. S. Dziadek, M. Tkocz, Scientific Papers of the University of Silesia, vol 2, pp. 41-54*; *Kantor-Pietraga I., Machowski, R. (ed.), 2012, Spatial and social transformations Bytom and its centre. Studies and Materials, Faculty of Earth Sciences, University of Silesia, Sosnowiec*).

Overall, I. Kantor-Pietraga, PhD is the author or co-author of 5 monographs, including two in English. In her scientific achievements, there is also a series of 41 scientific publications, including 6 in English. One of them has an impact factor (Attachment 4).

An important achievement of Iwona Kantor-Pietraga, PhD was her participation in the international research project: SHRINK SMART. Governance of Shrinkage within the European Context. The responsibilities of I. Kantor-Pietraga, PhD within the project comprised both the issues of research and organization. All activities of the SHRINK SMART Project Team at the University of Silesia have been highly appreciated both by the academic auditor Prof. R. Beauregard (*Columbia University, New York*), as well as formal and organizational auditors. The essence of I. Kantor-Pietraga, PhD's activities in the project were a major contribution to the theoretical conceptualization of the phenomenon of urban shrinkage and depopulation as well as selected issues of urban policy and social processes.

From the formal point of view, I. Kantor-Pietraga, PhD, has participated in meetings organized within the framework of the project, including the most important one from the practical and application point of view (*Breaking the taboo: Bringing shrinkage into the agenda in Bytom*, at: Policy Informing Workshop, Brussels, Foundation Universitaire, March 26, 2012, together with R. Krzysztofik), where a serious financial support package for shrinking cities in Poland and other European Union countries was decided upon.

I received The Team Award of Second Degree in 2012, awarded by the Rector of University of Silesia in recognition of the special achievements of the scientific and also research activities.

Iwona Kantor-Pietraga, PhD has participated in many national and international conferences and meetings (Attachment 5). At the same time, she was a co-organizer of the regional discussion panel "The Silesian Voivodeship. Shrinking cities - challenges, plans, synergy", the Faculty of Earth Sciences, University of Silesia, Sosnowiec, 25 May 2011. The first event of this size in Poland was a meeting with scientists and representatives of local governments, and dedicated to the problem of depopulation and urban shrinkage. I. Kantor-Pietraga, PhD continually participates in various organizational and academic activities (academic, local government, projects), whose essence is the experience and knowledge related to the issues of population (including the phenomenon of depopulation). All activities connected with participation and collaboration with other institutions, have been presented in detail in Attachment 5.

Iwona Kantor-Pietraga, PhD also has significant achievements and experience in teaching. She has conducted a total of 13 subjects for full-time and part-time students. Their detailed list is provided in Attachment 6.

Warsaw, 11.06.2014

Iwona Kantor-Pietraga