

## ARTICLES

**SOCIO-ECONOMIC CHARACTERISTICS OF THE SLOVENE URBAN SYSTEM**

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ABSTRACT

**Socio-economic characteristics of the Slovene urban system**

The aim of the article is to determine the basic social and economic characteristics of the Slovene urban system. With the quantitative analysis of social and economic variables for each of the 64 identified towns in Slovenia a classification, which elaborates the mentioned social and economic characteristics, was established. It was determined that it is possible, on the basis of our selection of variables, to form eight socio-economic settlement types, with each of them having distinctive characteristics. The analysis has also pointed out that the Slovene urban system can be regarded as a dynamic formation, with smaller settlements usually still being in the industrial developmental phase, while bigger cities have usually already transformed into tertiary centres, characteristic of the post-Fordist developmental paradigm.

KEY WORDS

urban geography, urban economy, urban system, socio-economic characteristics, economic transformation, multivariate analysis, Slovenia

IZVLEČEK

**Družbenoekonomske značilnosti slovenskega urbanega sistema**

Cilj članka je ugotoviti temeljne družbenoekonomske značilnosti slovenskega urbanega sistema. S kvantitativno analizo družbenih in ekonomskih spremenljivk za vsako izmed 64 identificiranih mest v Sloveniji smo ustvarili členitev, ki najbolje pojasnjuje te družbenoekonomske značilnosti. Ugotovili smo, da lahko na podlagi našega izbora spremenljivk ustvarimo osem družbenoekonomskih tipov mest, ki se medsebojno jasno razlikujejo. Analiza tudi pokaže, da je slovenski urbani sistem dinamična tvorba – skrajno poenostavljena ugotovitev je, da so manjša mesta praviloma še v industrijski razvojni fazi, medtem ko so večja mesta zvečine že preobrazila v storitvena središča, značilna za postfordistično razvojno paradigmo.

KLJUČNE BESEDE

urbana geografija, urbana ekonomija, urbani sistem, družbenoekonomske značilnosti, ekonomska preobrazba, multivariatna analiza, Slovenija

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## 1 Introduction

In the article we focused on the research of settlement economic functions, which derive from the complex division of work, which enables the existence of settlements and numerous economic activities and functions. Settlements do not boast only economic, but also non-economic functions (especially the residential function), with the two basic elements of their existence being centrality and diversity of economic activities and various forms of work, otherwise cities and towns would be regarded merely as »dormitory towns« (Vrišer 1974, 80). With the analysis of settlement functions, their specialisation and the quantitative and spatial analysis of the work-active population we contribute to the greater knowledge of the urban system in the post-socialist era and try to determine its possible changes and future developmental tendencies.

In the article we also, with the help of multivariate statistical methods, carried out the socio-economic classification of cities, based on the analysis of workplaces and the characteristics of business subjects. With the assessment and the use of a wide data spectrum of the Slovene urban system, we wanted to establish a simplified categorisation of the Slovene urban system in the form of a classification and determine its future developmental tendencies.

The article includes 64 towns, which were chosen on the basis of formal (population above 2000), functional (at least a local central settlement) and physiognomic principles (the amalgamation of settlements into a functional unit). Together they have a population of 889.056 which represents approximately 46% of Slovenia's population. These towns are home to 451.000 work-active inhabitants, what amounts to 47.5% of the entire work-active population in Slovenia. According to the Census from 2002 the selected cities boasted 70.5% of all workplaces in Slovenia and according to the Economic Census of Slovenia (2002) 110.000 (61%) of all business subjects. The characteristic of the Slovene urban system is that it comprises small, from the European perspective, even extremely small towns (Bole 2008).

## 2 Method

An urban system is considered a hierarchical form, comprised by structures, which mutually intertwine and affect one another (Rebernik 2008). On the basis of induction, which can be described as an all-rounded empirical analysis of socio-economic characteristics, all data can be scientifically explained, as we make a synthesis or the classification of towns regarding their characteristics within the urban system.

We decided on employing multivariate statistical methods, which are suitable for finding connections within a bigger selection of data and variables, seeing that the connections between them are harder to determine. With this purpose the factor analysis is often employed. We decided on a method, which is often used in numerous typologies of economic and business characteristics in a specific area (ex. Sorenson 2004), as it offers a broader definition of the town. It is based on the combination of the principal components analysis and the hierarchical classification into groups. The standard concept is to establish a smaller number of artificial variables, which elaborate at least 80% of the variant, on the basis of a much bigger number of variables. These artificial variables (known also as components) are then employed within the hierarchical classification into groups. The end result is the typology of towns, in which towns within the same group are as similar as possible, while individual groups are as different as possible.

The analysis comprised 45 variables, which describe the socio-economic characteristics of the urban system. With multiple repeating of the method of main components we excluded all the variables, which are clearly in auto-correlation and are therefore not suitable to be part of the typology. We included the following variable types, for which we think that they reflect the socio-economic characteristics of the Slovene urban system:

- Variables, which are tied to workplaces (locational divergence, sector- and activity-based orientation of towns).
- Variables, which are tied to business subjects (density, sector- and activity-based orientation, size, the time of formation and the origin of the capital of business subjects); as part of these variables we also included the data on added value in municipalities in 2004, which was accumulated by business subjects.
- The basic social variables (population number, the index of work-places).

For a successful realization of the main components method the selection of variables is of key significance. The selection was verified by the KMO test (Kaiser-Meyer-Olkin measure) and Bartlett's test of sphericity. The analyzed variables include all the significant elements of the socio-economic structure, as characteristics of work-places and business subjects.

The main components method shelled out six components, which explain the following groups of variables (Bole 2008):

- The first component describes progressive, speculative towns and is strongly connected to foreign capital and the share of workplaces in tertiary activities, as well as the high density of workplaces and newer companies, which were established after 2001.
- The second component describes the level of settlement suburbanization, seeing that it is strongly connected with the high locational divergence, the high density of business subjects and smaller companies with less than 10 employees.
- The third component describes the size of towns, as it is strongly connected to the number of inhabitants and the low density of business subjects.
- The fourth component describes the economic successfulness, which is connected to the growth in number of workplaces and the share of foreign companies.
- The fifth component is less distinctive, although it describes towns, in which the majority of business subjects was formed after Slovenia gained independence, mostly in the period between 1991 and 2001.
- The sixth component describes the towns, for which the economic foundations date back to the period before 1991; the component is connected to the variable of older business subjects.

In the second phase we started classifying data into groups on the basis of six components, which were acquired for each town with the main components method. We excluded the city of Ljubljana from the analysis, which, due to its bigger deviations, would negatively affect the classification into groups. Based on the experience of other authors (Kerbler 2003, 114; Sorenson 2004, 8) regarding the classification into groups, the Ward hierarchical clustering was employed, with which the affiliation to a specific group is determined with the analysis of the variance among individual groups. As a measure of similarity we employed the Euclidean distance. The disadvantage of the method lies also in the fact that the number of groups is not known in advance, which means that the process of classification into groups had to be repeated with a different number of groups, until the optimal result was reached. The groups were formed so that the towns within each individual group are as similar as possible, while the differences amongst the groups are as big as possible. In our case the best results were acquired with the classification into 8 groups. Alongside Ljubljana, which was excluded from our analysis right at the start, we, on the basis of the economic and social criteria, established 9 different types of towns.

### 3 The results of the socio-economic classification of the Slovene urban system

At first glance it is already clear that the typology has a typical geographic distribution (Figure 1). The predominant position is taken by towns of the first type (coastal towns, Sežana, Postojna and Nova Gorica), towns of the 7<sup>th</sup> type (bigger regional centres) and towns of the 6<sup>th</sup> type (»suburban towns«, administrative centres influenced by Ljubljana). It should be emphasized that we are dealing with

socio-economic typology, seeing that among 18 variables both completely social (population, sector focus) as well as economic variables, which are based on the characteristics of companies (size, date of establishment, source of capital, etc), are adequately taken into account.

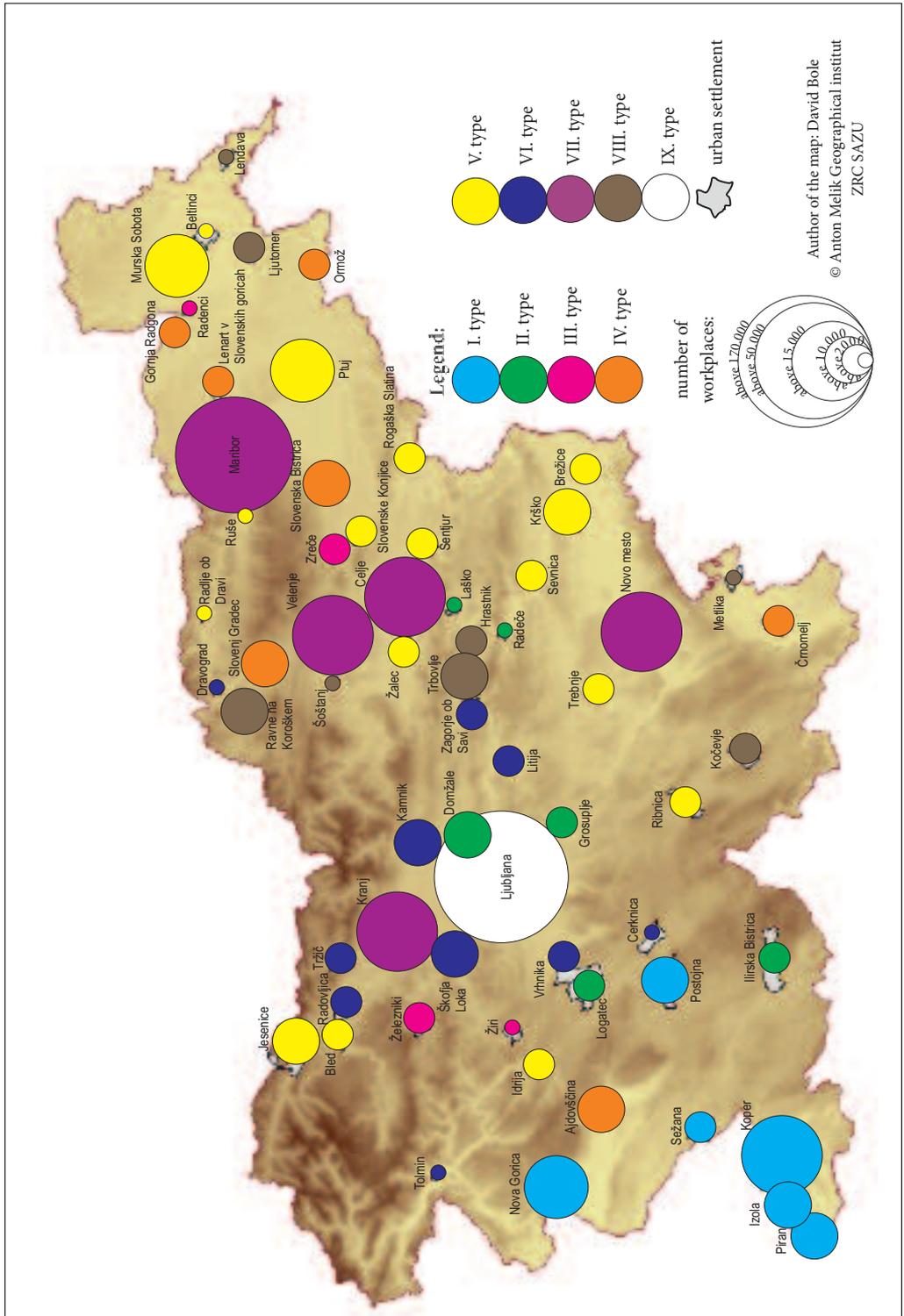
The first (I.) socio-economic type includes settlements, which are similar in the fact that they are above-averagely focused on tertiary sectors, especially the private one. The secondary sector is regarding all towns among the least represented and amounts to only 25% (the average of all towns is 36%). A high share of foreign and mixed capital is typical, especially in coastal towns and in Sežana. If we take into account, as an indicator of the town's success, also the added value of all activities in the municipality, this should be regarded as the second most successful type of towns. This type of towns can be regarded as enterprise propulsive and active, with a young structure of business subjects and the great participation of foreign capital focused on market, tourist and other tertiary activities.

The second type (II.) also comprises six towns. It is a geographically less characteristic sample of towns, which are, with the exception of Ilirska Bistrica, in the vicinity of bigger cities. The insight into the data matrix points to the fact that the similarity among these towns is based mainly on the »old« structure of companies. If for the companies of type I the establishment of new companies and greater participation of foreign capital are typical, the situation for this group is completely the opposite: distinctively above-average participation of companies, which were established before 1991, and of companies which were established with domestic capital. Regarding the workforce orientation there are no bigger deviations from the average values. The structure of business subjects premises that these are smaller or medium large towns, in which economic development, due to various reasons after Slovenia gained independence, came to a halt. In case of Logatec, Grosuplje and Domžale we can assume that this was the case, due to the constantly growing influence of Ljubljana, though they all still remain successful towns. We can make the same assumption for the towns of Radeče and Laško in the vicinity of Celje, whereas the town of Ilirska Bistrica has a distinctively unfavourable geographic location as it is located away from all bigger traffic routes. It is important to emphasize that the slower economic development of towns does not necessarily reflect in a worse socio-economic position, seeing that mainly the towns of Grosuplje and Domžale are places where many people of upper classes, who work in Ljubljana, live.

The third (III.) type comprises only 4 towns, which are mainly connected with the 3<sup>rd</sup> and the 4<sup>th</sup> components, which represent a lower number of inhabitants and a lower number of big companies (regarding the number of employed people). All towns are functionally oriented in the industry branch, where there are 72% of all workplaces, which is high above the average of all Slovene towns (28%). These are explicitly mono-functional towns, seeing that alongside the industry sector, only in the cases of Radenci and Zreče, the tourism sector stands out. This group of towns can be defined as small industrial centres, where an important role is played by big individual production plants (Comet, Radenska, Alpina, etc), as well as the electro-, metal-products and furniture industries (Domel, Alples).

The fourth (IV.) type includes towns, which are defined by three basic characteristics: secondary sector orientation; companies which were established before 1991 and the growth of workplaces in the decade between 1995 and 2004. This group is in regards to its orientation quite similar to the 2<sup>nd</sup> type, plus being more positive from the perspective of economic successfulness, as the number of workplaces in these towns has grown for 4302 or almost 16%. These towns are mainly smaller or medium large industrial centres, the industries of which are clearly quite successful as the employment rate is on the rise. Local companies with more than 200 employees are predominant. The share of people employed in the industry sector is above 50%. The distribution of service activities, especially the public (administrative and educational) and the business-financial services, is below average. This group of towns is regarded as medium large industrial centres with successful companies, which have, regardless of the general decline of industry after gaining independence, seen an increase in the number of workplaces

*Figure 1: Socio-economic typization of Slovene towns (Bole 2008). ►*



within the industry branch. Among the successful companies we can count mainly the companies from food-, textile- and engineering industries.

The fifth (V.) type is the most common and comprises 17 towns. At first glance this is quite a heterogeneous group of settlements, at least regarding their size, as it comprises medium large (Ptuj, Murska Sobota, Jesenice) cities as well as smaller towns (Ruše, Beltinci, Radlje ob Dravi) of the urban system. The overview of the components results shows that all towns are tightly connected to the fifth component, which is the least explicit and it basically describes the Slovene urban average. This is a group of towns, which are industrialized slightly above the average (35%) and which have an average locational divergence for towns and in which medium large business subjects with domestic ownership, which were established in the period between 1991 and 2001, are predominant. The method of classification into groups has defined this group as the most average one and such, which is in the middle of the cluster of variables, while it cannot be included in any other group.

The sixth (VI.) type comprises ten towns. These towns are connected through the components of suburbanization and average values. While for the second type of towns it is typical that they haven't economically developed much after Slovenia gained independence, for the sixth type of towns economic regression is typical. These are towns, which have more work-active inhabitants than there are potential workplaces. Characteristic of these towns is the decrease of workplaces, especially in older industrial centres, as for example the towns of Tržič and Kamnik. Among all the towns the most favourable indicators are found in the case of Škofja Loka, where the number of workplaces has even slightly risen. These towns became either administrative centres with high locational divergence (Dravograd, Tolmin and Radovljica) or they are considered as moderate industry-based centres, which do not guarantee enough workplaces for the employment of local people (Škofja Loka, Kamnik, Litija, Cerknica, and Tržič). These towns also boast high levels of daily mobility to bigger employment centres. In the towns of Dravograd and Radovljica 73% of all work-active inhabitants are daily commuters, similarly in Tržič (74%) and Kamnik (70%), which can be compared to the most suburbanized municipalities in Slovenia. Vrišer (1984, 49) defined these towns as towns of the suburban type, which are on the one hand characterized by the economic regression, but on the other their »suburbanization« guarantees their inhabitants a good socio-economic status.

The seventh (VII.) type includes only five towns. These are bigger regional centres, which stand out due to their economic role and offer employment also to the people living on the outskirts of the cities. All together they represent 38% of workplaces of the entire urban system. Quite a favourable structure of business subjects is typical, seeing that alongside already established companies with bigger numbers of employees, there is also an above-average level of younger companies, which were established after 2001. These towns boast a favourable combination of older, work-intensive companies and smaller, fragmented companies, which is reflected in the even growth of workplaces, which in the period from 1996 to 2005 amounted to 4% per year. The share of medium large companies is below the average. Kranj, Novo mesto and Velenje are bigger industrial centres with industry, which is important on the national level (pharmaceutical, electro-, auto- and engineering), whereas Maribor and Celje are considered more tertiary centres.

The eighth (VIII.) type comprises eight towns. This is a group of towns with unfavourable socio-economic variables. The number of workplaces is decreasing (for 1780 or 6%), medium large companies with domestic establishment capital and the above-average share of older business subjects are predominant. Quite unfavourable structure is seen in Trbovlje, which has a surplus of the work-active population over the number of workplaces. All towns are explicitly mono-functional and focus mainly on secondary activities. The share of employed people in industry and mining surpasses 40%, while service functions are quite below the average. Towns in this group reach only 70% of the average employment rate in trading. Economic stagnation and regression are visible in the lack of new business subjects. This group differs from the 2<sup>nd</sup> and the 6<sup>th</sup> group, which are also characterized by socio-economic regression, in the fact that it does not include »suburbanization«. This type includes the worst economic

conditions, due to the absence of daily mobility which does not sooth the social environment, as is the case for towns of the 6<sup>th</sup> and 2<sup>nd</sup> types. These areas are usually described as »depressive«, because they were once relatively successful industrial areas, which later on started to regress and experience the economic crisis (Ravbar 2000, 57), and contrary to the towns of the 6<sup>th</sup> type, they were also not able to transform into administrative or tertiary centres.

The last group includes only the city of Ljubljana, which was right at the start taken out of the classification process, seeing that it, due to its characteristics, decreases the stability of the classification. Ljubljana as the main economic centre of Slovenia stands out regarding all the criteria aspects. Ljubljana is, due to the big surplus of workplaces, the main mobility destination of people from all over Slovenia. Ljubljana's tertiary socio-economic character stands out the most, as the city focuses moderately on tertiary and explicitly on the quaternary sectors. Ljubljana is the functional centre of all the activities in Slovenia, especially non-economic ones, such as administration, education and research, health care and social care. Regarding the ownership of business subjects the share of foreign and mixed capital is above average, whereas with other activities it does not stand out.

#### 4 Socio-economic »successfulness« of individual town types

On the basis of the general socio-economic development town types can be divided into three basic groups:

- towns which are on the economic level in regression or stagnation; a part of this group are centres of the 2<sup>nd</sup>, 6<sup>th</sup> and 8<sup>th</sup> type;
- towns which are on the economic level in progression; a part of this group are centres of the 1<sup>st</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, 7<sup>th</sup> and 9<sup>th</sup> type;
- towns with moderate progression; a part of this group are centres of the 5<sup>th</sup> type.

Towns which are in economic regression differ amongst themselves, because some of them are gaining more in their residential function and are with that losing their economic function, as they are becoming part of a wider suburban area (for example the 6<sup>th</sup> and partly the 2<sup>nd</sup> type of settlements), which points to the high level of urbanization or even the start of metropolisation (Ravbar 1997). Their economic role within the urban system is decreasing, although it still remains important (example: the town of Laško). Some cities of the 2<sup>nd</sup> type (examples: Domžale and Grosuplje) stand out within the group, as they are considered more successful cities, though they boast an older business structure, which means that they are actually in regression regarding their economic condition. Cities with geographically less favourable locations and a more mono-functional economic structure are experiencing a visible crisis. Among these towns we can also count the towns of the 8<sup>th</sup> type, where in the past the industrial activity was of great importance, but it did not succeed in adapting to the newly established market conditions. These are towns where the economic development in the past was based mainly on the mining industry (Trbovlje, Hrastnik, Šoštanj) and ironwork industry or only on one work-intensive industrial branch, as is the case of the oil refinery in Lendava or timber industry in Ljutomer. The general economic crisis started already before Slovenia gained independence, in the second half of the 1980s. The loss of markets from the republics of former Yugoslavia and the unpreparedness regarding the market system with technologically inadequate and inflexible production were the reasons why these towns were hit by big social problems and unemployment issues. Towns, which were poly-functional, managed to fight through the crisis and reemploy a part of the work-active population in tertiary sectors. Such an example is the city of Maribor, which has been considered as an industrial centre for a long time, but nowadays it is regarded as a tertiary centre; the same goes for the city of Jesenice, which is not anymore »functionally focused only on one activity« (Vrišer 1998, 307).

Towns which are in economic progression can among themselves be quite different. A group of smaller industrial centres stands out the most. These are small towns, which preserved big production plants

from the socialist period, which have, due to different reasons, transformed into market companies with markets outside the republics of former Yugoslavia. This is a small group of towns, which are, due to their explicit mono-functionality, in the times of globalization quite vulnerable, mainly because of the dangers of production migration in some less developed countries. All these factors contribute to the same position of the towns as is the position of settlements of the 8<sup>th</sup> type. Quite one-sided is also the economic development regarding medium-large industrial centres, which are nevertheless diverse enough and therefore also less vulnerable. These are towns, which base their economy on bigger production plants, and which are important on the national level and have succeeded in their transition to market economy. Foreign investments are an important factor in the economies of coastal towns, Sežana and Nova Gorica. The closeness of the open EU borders also represents an important location factor. The biggest Slovene towns regarding the number of population are also Slovenia's biggest economic centres. These are six biggest Slovene towns, which boast almost 60% of all workplaces in the urban system. Ljubljana, Maribor and Celje are considered as tertiary centres, while Novo mesto, Kranj and Velenje are more industrial centres. These towns have a guaranteed position within the group of successful economic towns due to their size and dominant role in their regions, and have a relatively heterogeneous structure of workplaces. Their future does not depend only on a particular type of economic activity, but more on the intertwining of social and economic factors.

Towns with moderate progression are in Slovenia most common, with their common characteristic being the averageness, as they boast an average structure of business subjects and other characteristics, although the differences within this group are smaller. The example is the town of Jesenice, which is, with its regression of workplaces and its lower locational divergence, similar to the economically regressive towns of the 8<sup>th</sup> type. The data on business subjects and functional orientation has in the period after 2001 shown positive tendencies and greater functional diversity, seeing that alongside industry also transport, construction and other activities are present. In the group of towns with moderate progress we also included some national centres, mainly the towns of Murska Sobota and Ptuj, which are, due to smaller companies and more moderate growth of the number of workplaces, not part of the 7<sup>th</sup> group, like the similar, more successful regional centres. Regarding the flow of workplaces and functional diversity we can determine that the towns of Brežice, Sevnica, Krško, Rogaška Slatina and Žalec have a negative tendency, whereas the towns of Radlje ob Dravi, Ruše, Beltinci, Trebnje, Slovenske Konjice, Ribnica and Idrija boast a positive tendency of improving the socio-economic conditions.

## 5 Conclusion

We are able to give some insight into the current state of the urban system, more than two decades after the re-establishment of capitalism. It is our finding that the Slovene urban system is currently in the transition period from the industrial to the post-industrial developmental phase. On the basis of the socio-economic typization the current developmental level can be determined for each specific town. An extremely simplified finding is that smaller towns are mainly still in the industrial developmental phase, whereas bigger towns have mainly already transformed into tertiary centres, typical of the post-Fordist paradigm.

Among other article aims we mentioned that we wanted to verify what are the changes and further developmental tendencies of the urban system. The analysis has shown that the transformation into the new socio-economic system is the most intensive right at this moment in time. It is expected that Slovene towns will be more and more under the influence of the post-Fordist economic system, which is defined by tertiarisation, the rise of cultural production, the »deconcentration« of industry and the instability and flexibility of the workforce market. This is especially true for towns still in the process of transition (as for example Maribor and Trbovlje), while in all other towns these processes will additionally strengthen. The biggest unknown factors are smaller industrial towns, which are due

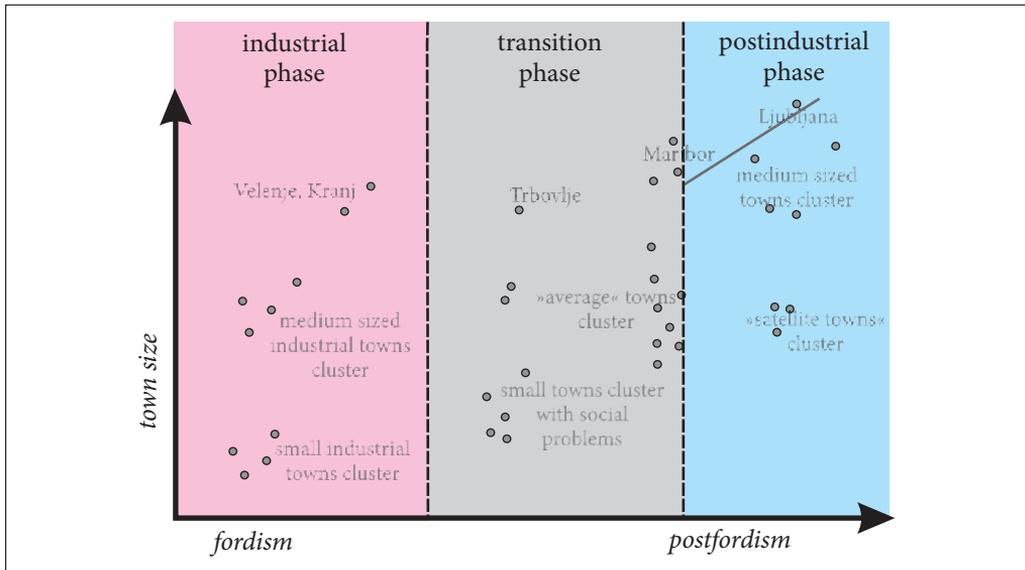


Figure 2: Schematic illustration of the Slovene urban system regarding socio-economic phases (Bole 2008).

to their industrial companies, on the »Fordist« basis, quite vulnerable. If these small industrial towns are able to transform their production into a more flexible form (flexible specialization), they will also be able to quickly adapt to the global economic challenges. The possibility of a successful integration into the global economic process also surfaces in light of searching for new products and technologies within the old industrial tradition (neo-Fordism) (Ravbar and Plut 1999, 112), which is shown in the case of the successful restructuring of Idrija's production activity.

If we agree with the statement that the synthesis of all socio-economic indicators is shown in the relation »industrial/post-industrial«, we can form a symbolic illustration of the urban system, which tries to show all the characteristic socio-economic phases (Figure 2). In the lower left corner of the Figure 2 the towns of the 3<sup>rd</sup> type of our typology are located (small industrial towns), whereas in the upper right corner there is Ljubljana as the main economic and social centre of the country.

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