PhD Thesis Abstract
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The passenger transport as an instrument for spatial adaptation in labour market, in Baranya County villages

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1. Introduction

The settlement structure of Baranya County is a heritage of centuries. Masses of people living in villages left the agrarian sector because of the effects of the development of the production means, the growing level of industrialization and the further attributes of socialist era politics (e.g. collectivization). The integrity of living and working places could hardly be maintained. The settlement network of the County experienced harder pressure than ever before, which made the changes even more radical. These changes can be seen in migration and demographic processes of the settlements. The tension deriving from the difference between the spatial location of the population and the workplaces was eased by the growing level of commutation. After the change of the political system, the more or less formal intention to push the villages with low population into the background ended, but with the conditions of market economy, the decreasing employment possibilities, and with the liquidation of bigger economic units (workplaces) in the rural regions, the pressure on the settlement network kept increasing from a certain aspect.

The settlement system – deriving from its nature – can react only with limited flexibility to the changed circumstances. The growing regional differences of employment and unemployment causes significant social problems today, and the state of the most disadvantageous areas are not changing. In the cause of the growing regional differences we can mark progressive, stagnating and disadvantageous areas.

Today, the future of villages is differentiated by the labour market situation (BELUSZKY P. – SIKOS T. T. 2007). The population of small settlements which located far from the major employment centers suffers insurmountable disadvantages as their settlements are not able to offer significant employment opportunities for them. The problems can mostly be explained with the geographical location of their homes and the lack of travelling possibilities. Corresponding to this, the location energy deriving from the geographical locations of the settlements, and the ability to overcome the distance strongly determines the spatial mobility of workforce and the spatial adaptation ability of the residents, thus the future of the settlements (regions).

One possible way for the spatial adaptation to the dependent labour market situation, and for the moderation of the significant regional differences lies in the physical communication and in overcoming the distance. The daily commuting makes it possible for

the village inhabitants to earn working-income avoiding the obligate transmigration, and to become dependent to the unemployed payment. Therefore, the most important factor of daily commuting (in case of existing employment opportunities suitable for the worker's demands, skills and abilities) is the satisfactory level of transportation connections between settlements.

In many cases the transport system, as the carrier of the drift of labour, is not sufficient to assure the economical way of overcoming the distance, thereby to solve the closeness of the local labour markets. The special structure of the settlement network of the County, and the high number of the dead-end villages are makes hard circumstances to the public transport providing companies. Under these circumstances and with the low mobility and the adverse demographical situation of the rural population, the public transport providers are not able to supply the services in an economical and effective way. The cost sensitive rural employees are hardly able to use private means of transport (which are more expensive above certain distances and also disadvantageous in environmental aspects) in the case of not sufficient public transport possibilities. That is especially noticeable on the disadvantageous areas. The unfavourable processes of the employment and of the mobility of the population is the increasing domination of market aspects, and the decreasing funds of the governmental participation are reduces the supply of the uneconomical public transport services. There are cases when this process is unavoidable, but in many other cases the main reason is the effort to reach cost effectivity in transport companies (like in the cases of closing down some of the feeder-lines of the railway system).

The possibilities of overcoming the distance are strongly determines the progressiveness of the rural areas and settlements. The lack of these possibilities strengthens or preserves the disadvantages of these areas. Improving the transportation accessibility (even by the way of reforming the passenger transport system) is crucial for the rural population. The improvement (or sustainment) of the ability of overcoming the distance can ensure the keeping or improving the rural employment, the chances of working as a daily commuter. Also this is one of the key factors in keeping or improving the progressiveness of the settlements, and the ability of keeping the population. The reforming of the transport system which has strong effects on the settlement system, is crucial. This task can not be completed only by the way of making the transport companies more cost effective. During the preparation of the reforming of the transport system, an emphasized

attention should be put on the analysis of the labour market processes, the drift of the labour, and to the demand of the daily commuters (whereas this population is the most sensitive to the possibilities of transport). We must attempt to find the most rational ways for the expenseful infrastructural investments, and we must find the conceptions which can be accomplished mostly by reorganizing the actions, and is best suffice for the economic-, social- and environmental characteristics of the areas. Based on these, it can be said that in the establishing of the reform of the passenger transport system, and in the analysis of the expectable effects, Geography (as spatial science) must have an important role.

2. The aims of the research

The conclusions of studies, those were purposed for analyzing the questions and regional characteristics of passenger transportation accessibility, and were made on regional or country-level sample, are mostly valid for Baranya, but to survey the local conditions, and the accessibility of the major employment centers, and to analyse the role of the transport modes, we must do more detailed studies, based on local samples.

The settlement network of Baranya County is characterized by high number of micro-villages. The character of the region is not advantageous for the current, and even less advantageous for the future employment structure (because of the increasing concentration of the workplaces). The settlement system experiencing a higher tension than ever, and because of the limited flexibility of this system, socio-economic tension arises.

The possibility of migration to the major employment centers (cities) is limited (the forcing of this is also not reasonable), and the demand of excess labour force in the cities and towns are also not sufficient to provide jobs for much higher number of village employees than today. It could not be possible even if the ability to overcoming the distance would not be limited. The differences in the estate prices are also limiting the possibility of the migration, so in the County there are large areas formed with growing social problems, and has increasing disadvantages in social and economical aspects compared to the average. These adverse processes could be delayed, or the expansion of the disadvantageous areas could be stopped by the sustainment (or improvement) of the possibilities of daily commuting, which can be accomplished through the improvement or the reforming of the passenger transport system. The improving of the possibilities of overcoming the distance would make the positive effects of the employment centers to be expanded over the

disadvantageous areas. Also the improving of the possibilities of communication to a higher level could realize the positive effects of the investitions into the human resources of the disadvantageous areas. The decrement of the regional differences (which has damaging level today) in this way, and the reducing of the dimensions of the disadvantageous areas, could make higher savings than the costs of the reforming of the public transport system. (Savings could be realized by the reductions in the social outlays, and in the reductions of costs of the environmental damages caused by the private traffic.)

For the confirmation of these statements, and to analyse the possibilities and the importance to make the public transport more competitive in the current circumstances (speciality of the structure of settlement system, low employment, etc.) in my dissertation foremost I wanted to find the answer for the question that how sufficient is the public transport system in its current state to satisfy the demand in for the point-to-point transport of daily commuters. I mean to survey the transport pheripheries from the view of the daily commuters. I mean to analyse how the private transport is able to compensate the disadvantages resulting from the lack of public transport supply. I mean to estimate and to picture the ability of the spatial adaptation to the labour market situations. I mean to compare the above to the development of the employment situations, the characteristics and changing of the County's settlement system.. I mention the importance of the reforming of the passenger transport system, with showing the connections between the spatial characteristics of the County and the sustainment of the public transport delivery. I also mention the future effects of the changing of the settlement system to the maintenance of the public transport delivery.

In the anterior studies made by affinitive aims, the analysis of transport accessibility was carried out in a different approach. In this research, I meant to make settlement level analysis to discover the location energies of the settlements (analyzed by this aspect), and to show the initial conditions of the village inhabitants in the increasing labour market „competition". Also the settlement level analyses makes possible to survey the regional differences in an adequate precision.

In my dissertation I mainly analyzed the ability of the daily commuting, since the weekly (or monthly) commuting is possible from all of the villages. In these cases the geographical location of the settlements are not the determinant condition, so the analyzation of the ability of spatial adaptation would not be adequate.

In my view the simultaneous analysis of the role and ability of the daily commuting, and of the possibilities of transport is also reasonable because of the fact, that the daily commuters are the more sensitive to the supply of the public transport, than the others. In the case of the students, the possibilities of the transport are also determinant, but usually not means the terms of being intrant to an educational institution. The students usually has a chance to reside in student hostels, their „workday" also calculable, but that is not the case for the daily commuters. The students also has guarantied bots for the costs of moving between the home settlements and the educational institutions. Therefore the ability of overcoming the distance from the view of the students are not effecting as strongly the progressiveness of the settlements, and the changing the settlement system, than in the case of the daily commuters. And also the characteristics of the settlements and the other circumstances has fewer effects on their mobility.

It is also crucial to analyse not just the existence of the possibilities of the passenger transport, but to analyse also the quality of the transport supply, the importance of the accessible employment centers (the demand of the labour). It is determinant to the future of the villages, whether their inhabitants which employment centers can reach effectively. (It sets the level of the work-income, the structure of the demand for professions, etc.)

2.1.1. The aims:

- I present the role of daily commuting during the last few decades, and after the regime change in providing chances to the village employees to earn work-income, and that how the different possibilities of daily commuting effected the differentiated development of the settlements, and the changing of the settlement system.
- I analyse the transportation accessibility from the view of the daily commuters, at settlement-level.
- I discover the ability of the spatial adaptation to the labour market situation in Baranya County villages, from the view of those who were unable to find working opportunities in the home settlements. I also discover the connections between this ability and the geographical location of the settlements.

- I analyse the role of the different passenger transport modes in serving the mobility of the daily commuters, and I also make a detailed analysis on the supply of the public transport services, and on the co-ordination between them.
- Based on the results, I frame conclusions on the effects of changing of the transport accessibility to the formation of the settlement system. I estimate the averrable disadvantages of the peripherial regions.
- I mention the ability of reforming the passenger transport system and the ability of improving the spatial mobility of the labour. Based on the results, I confirm the importance of this reorganization, and I define the priorities of it.

3. Materials and methods

I have chosen the applied methods based partly on the experiences of anterior studies, and I also used especial methods optimalized to the local characteristics. The most considerable part of my researching work was collecting and analyzing the statistical datas, and the calculations based on these datas. I also gained important informations during the field work, and during interviews. I attached importance to use practical approach and view. To achieve this, before the starting of the collection of datas, and the researching work, I wanted to recognize the most important problems of the theme, and the most important and relevant characteristics of my research field, Baranya County. In this process, the first step was to make interviews with experts, who has valid knowledge on the different elements of this theme. Among the subjects of the interviews, was the former leader of the „Kispad"-Foundation. The main reason in choosing the suspect of the first interview, was the importance of the knowledge about the problems of living in micro-villages, with the ability to express this knowledge with a researcher's objectivity. The suspect took part in the organization and maintenance of the service of village-supervisors, and also has frequent contact with the village-supervisors (who has all-round knowledge about the many kinds of problems in rural areas).

Before analysing of the connections, I also had to discover the views of the transport companies. To achieve this, between 2004 and 2005 I made interviews with the leaders and advisers of the major transport companies of the County. The suspects of those interviews were: the traffic-director of Pannon-Volán Inc.; the chief adviser of the MÁV Inc; the head of the public-transport department of MÁV Inc; the deputy-manager of Pécsi Közlekedési

Inc. These interviews were very useful, as I could discover the problems of the maintenance of public transport services from their view.

The field work also helped me to achieve the practical view. (I could gain more important informations, and I also made interviews with the workers of the public transport companies, and with the travellers.)

For the analysis, I collected the datas from different sources. The most important sources were the online databases of Hungarian Central Statistical Office. I also applied the settlement level datas of the Public Employment Service, which were essential and very useful in following the economical and employment processes of the region. (These datas are available in the same form back to years.) To gain information on the settlement system, I used the Baranya statistical yearbooks of the Hungarian Central Statistical Office.

Through the Internet, I could collect information about the international experiences in analysing the rural public transport possibilities (in the form of published coverages on international researches on the shame problems). To analyse the supply of the public transport services, I applied the online schedules of the transport companies.

In my work I mostly made calculations with settlement-level datas. I made the analysis of the transportation accessibility with the datas of the coach services, and also with the datas of railway services. I analyzed the daily (on workdays) accessibility (schedules and road-time) of the different employment centers (cities, towns) from the view of all villages. I also checked the possibility of travelling on the opposite direction (from workplace to the home settlements). I pictured the results on cartograms. I also discovered (based on calculations) the ability of the spatial adaptation to the labour market situation. The correlation between the ability of the spatial adaptation and the transportation accessibility helped to frame conclusions. I used geoinformatics to find the connections between the possibilities of daily commuting and the geographical location of the settlements. For this calculations, I used digital maps, CAD-softwares, and a self made LISP-form application.

4. Results

In my dissertation, regarding to a chosen regional unit (Baranya County) I analyzed the possibilities of overcoming the distance, and the determinant factors of it, from the view of a chosen mass of people (daily commuters). I did not analyse the daily commuting as demographic category, instead I interpreted it as an instrument for the spatial adaptation to the labour market situation.

▶ With the example of Baranya County, I summarized and presented the typical problems of the public transport, and of overcoming the distance in regions characterized by high number of micro-villages, both from the side of transportation accessibility of villages, and from the views of the supply of transport services. From the views of the mobility of village employees I presented the most important connections between the transportation conditions and the social-, economical development. I framed the priorities of the reforming of the passenger transport system, from this views.

▶ I presented the role of daily commuting in the last few decades, and after the regime change in providing chances to the village employees to earn work-income, and that how the different possibilities of daily commuting effected the differentiated development of the settlements, and the changing of the settlement system. The analyses on the possibilities of daily commuting, based on the calculations, shows that the more fewer population a village has, the less work-opportunities we can find locally, and also the inhabitants of smaller settlements has fewer chances to the daily commuting. Collaterally with this, the ratio of the unemployeds compared to the active-aged population are higher in the smallest villages. The villages with the fewer population, and with the most disadvantageous demographical processes, can find mostly on the peripherial areas. The analysis of the unemployment-ratio shows the effects of the distance between the settlements and the most important employment centers, thus the importance of the development of the transport system.

▶ I discovered which are the most important employment centers, and which are the most significant employee-producing settlements of the County, based on the statistical datas of daily commuting. To discover the role of those central settlements, I analyzed the differences of the potentials of spatial accomodation, based on settlement level datas. I pictured the results on cartograms. The analyzation of the results, and the map was

advisable to make detailed analyses on the spatial differences of the ability of daily commuting. The expansion of the positive effects of the demand for excess labour of the county seat could be visible. Also the role of the main transport infrastructure, and the effects of the higher level transport services (concentrates on the major elements of transport-infrastructure) could be displayed. I also could analyse the optimal distances of the daily commuting. The results of the calculations made it possible to make a more adequate view of the role of the lower central settlements (Mohács, Beremend, Bóly, Szentlőrinc, Szigetvár, etc.) Also the importance of the labour force attraction of the cities of neighbouring counties could be examined. The analyses showed the dominancy of Pécs, and the importance of the good accessibility of the county seat.

The dominancy of Pécs in employment reveals the insecurement of the rural and peripherial areas of the County. The development and progressiveness of the county seat is also a crucial factor of the development of the rural areas. If the demand for labour force of the employers of Pécs are decreasing, that would be also a critical challenge for the employees of the rural areas. This fact reveals the importance of the strengthening of the further central settlements of the County.

▶ I presented the role of the most important transport lines (main road Nr. 6, Nr. 57 and Nr. 58, and the Dombóvár-Pécs railway's section between Szentlőrinc and Pécs) in mediation of those effects. The distance became uncovered, in which the better transport supply concentrated on the main elements of the transport infrastructure, improves the ability of the served settlements in the labour market spatial adaptation.

▶ In my dissertation I analyzed the role of the different transport modes in serving the mobility of the daily commuters. In this field in Baranya County, the public coach transport (which serves all the settlements on weekdays) plays the major role. The accessibility of Pécs is crucial in the progressiveness of the villages of the County. In the case of 140 villages of Baranya County (48% of the villages), the supply of the public coach transport can be declared adequate or sufficient in the serving of the daily commuting to the county seat. Out of the remaining 149 villages, in the case of 73 villages, even for the potential commuters working in conventional duty, the daily commuting to Pécs by coach is beyond possibility. It follows from the structure of the settlement system of the County, that the main transport routes serves the communication between the significant settlements. Also these transport routes serves the hundreds of villages lies by that routes. If not one of

those significant settlements is targeted by the traveller of the villages, or the target settlement lies far from the most important transport routes, then it is likely that the transport by coach is not possible (or only by unacceptable loss of time). If Pécs is accessible from a village by the early morning hours (and the road-time also adequate), than in the most of the cases many other significant settlements becomes accessible by the way of transfer through the city. Nevertheless in many cases the county seat is must be turned into the way by those, who are in course to an other town, so the cost of the transport and the time loss are increases.

The seats of the microregions acts like transport-intersections. Even so in some cases these towns are also not accessible sufficiently from some of the villages of their microregions. Alongside the main roads, the public coach transport provides the possibility of the daily commuting across the county border. The labour force attraction of those neighbouring cities, lies close to Baranya can be expanded to the villages of the County, and moreover in case of lesser distance this attraction could be dominating. The most important settlements in this view are Kaposvár, Dombóvár and Bonyhád.

▶ I presented that the Szentlőrinc-Pécs railway section is the most important among the railway sections in direction of Pécs, in serving the daily commuting, and the main reason is the lesser road-time and lesser costs compared to coach transport. Despite of the fact, that the demand of the passenger transport in these route is sufficient, an effective suburban-featured circulation could not be emerged. The main reasons of it is the single-track railway. In this route, because of the high number of the incoming commuters to Pécs from other towns (Szigetvár, Szentlőrinc and Sellye), the the railway transport must have even a more important role in the future, than today.

In serving the mobility of daily commuters of the villages, the Sellye-Szentlőrinc railway section also has an important role. This role lies in the serving of the daily commuters (heading to the towns) of the mostly deprivated villages alongside Sellye. In the circulation on this route, the most important is the mobility of the daily commuters and the students in the directions of Pécs. The demand of the passenger transport in this route is sufficient, compared to the other vicinal railways of the County.

▶ Among the daily commuters of the villages, the ratio of the private car users is growing strongly. It can be declared, that the usage of the private ways of passenger transport (mostly the usage of the passenger cars) creates a more and more intensive

competition to the public transport. On the villages with higher unemployment, the number of the cars per 1000 persons are lower. Also the villages with the highest level of unemployment are in the worst position in the improvement of the motorization level. Therefore those, who lives in the villages with higher unemployment, they has less abilities in having and maintenancing passenger cars. The close connection between the location of the main elements of the transport infrastructure and the level of the car supplement can be seen in the case of the villages of the County. That is even more typical in the villages lies near to the cities. In these villages, the number of the passenger cars per 1000 persons are in the highest category in the County, despite of that the supply and quality of the public transport services (route frequency, road-time of the route) are also much higher than the average. In the current state of the transport system, in the case of low commuting distances, the public transport is lesser competitive compared to private transport.

In the rural areas of Hungary, because of the often low car supplement, there is no adequate possibility of applying the private transport. Furthermore with the lower level of working-incomes the using of the private transport (which is more expensive than the usage of the public transport) entail higher expense to the rural population.

5. Conclusions

▶ The analysis of the supply side of the passenger transport can not be restricted to the analysis of the directions of the connections, and the daily route numbers, since this analyses can not discover the transport possibilities of the daily commuters (and the potential commuters), and the economical and social consequences of the lack of the ability of overcoming the distance.

▶ The maintenance of the public transport services without the financial support of the state is not possible in it's current state. Nevertheless before making decisions on the limitations of this support, thus the maintenance of the public transport services, it is necessarry to reckon with the following:

- in the case of not adequate public transport services, the costs of daily moving between the homes and workplaces increases, consequently the purchasing power of the local population, thus the demand of the services/products of the region also decreases;
- with the narrowing of the possibilities of mobility (and with the increasing costs of the passenger transport), the employment level is decreasing, and this also increases the social costs;
- the deficit increased in the transport companies which were forced to provide substitute public transport services instead of the transport lines were discontinued (mostly feeder railway lines) before in the concept of economization;
- with the worsening of the public transport services, the increment of the role of the private passenger transport is accelerating, which will decrease forward the demand thus the effectiveness and competitiveness of the public transport;
- the increasing contribution of the private transport causes the increment of the costs by the way of causing more damage on the environment.

▶ The demand of labour force of the companies/institutions is in close connection with the costs of the employment. Along with the prices of the labour force (working-income) and the fees, the engagement related to the moving of the employees to the working place is also to be reckoned with during the making of the decision about the employment. If the cost-savings related to the employment of a village inhabitant (with

lower demanded work-income than the ones living in the city) is less, than the cost of the daily transporting (what partly the employer has to pay), and the potential employee does not have better qualifications and skills, the employer (if alternate candidate is exist) could withdraw form the employment. The results of the analysis of relevant statistics confirms the strong connection between the level of the public transport services (which is much more cost-effective from the view of the employees and employers) and the employment situation of peripherial areas.

▶ If we analyse the problem from the view of the potential employees, we can declare that in making the decision about the level of the expected work-income, and on whether taking a job or not as a daily commuter, when the only way to moving to work is the using of private car, the employees must calculate with the additional costs of travelling and also the costs of the maintenance of the vehicles. If we look to the maximum acceptable limit of the full transport-related costs (form the view of a commuter) as a constant value, then with longer commuting distances the circle of the potential target settlements are narrowing. With the longer and longer commuting distances from the major employment centers, the disadvantages (lies in the additional-costs of using the private transport) are quickly getting higher, and above a certain level it gets unacceptable. The inhabitants who lives in disadvantageous areas more depends on the adequate level of public transport supply, and they are less capable to replace that by using private ways of transport.

▶ The often insufficient demand for the public transport services not always comes from the low mobility of the rural population. The schedules of coach and railway transport often contains errors, and shows the lack of timing and synchronizing. Consequently there are lot to do in abolishing the dual transport supply on the same routes, and in synchronizing the schedules. With the co-ordination of the coach and railway transport, and with the strengthening the feeder role of the coach transport, the exploitage of the line could be more adequate, and the economical effectivity of the transport companies could be improved. Also the private cars could be act like feeder transport units, providing more effective and economical ways of moving to the commuters. The improved cost effectivity of the public transport system could be materialized only with the forming of a high capacity magistral line system, providing lower road-time and higher route-frequency, which the service could be more attractive to the car owners then today.

▶ The role of the agglomeration of Pécs will be even dominant in the future, the concentration of population will be stronger. With the concentration of the population with better chances on the labour market, also the concentration of the daily commuters is going to be stronger. In the case of lesser distance between the homes and workplaces, the costs of moving by private vehicle is more cost effective, than the public transport (and also using a private car is offers much more comfort in the movement). So in the favor of improving the competitiveness of public transport it is important to introduce the unified rental tickets in the suburban-featured transport, and the schedules of railway and coach transport should be optimalized and harmonized.

After analysing the schedules of the public transport, we can see that the moving across the county border is detained by the lack of collaboration (and by the concurrence) between the transport companies of the different counties. It is specially visible in the inadequate accessibility of Dombóvár, from the villages of Baranya. This also emphasizes the importance of officially forming regional transport unions or collaborations.

▶ With emphasizing the importance of the leading employment centers, it is also worthy to declare that the demand of excess labour force of these settlements are lower then the labour force oversupply of the villages in rural areas. Accordingly to this, the importance of the low level centers of the microregions will (should) play a more important role in the employment in the future. (Of course it depends on the success of the employment policy.) Consequently the public transport should be able to provide services in the directions of those settlements, not only in between the major cities and towns. This could be based on a more progressive, demand-oriented micro-regional public transport system, which is optimalized to the characteristics of the selected areas.

▶ In the case of the mid- and long distance commuting, with the unitary lengthening of the distance, the increment of the road-time is going faster, and the average speed of the route is decreasing faster (it is comes from the charasteristics of the settlement system). As we saw it, mainly because of the direction of the most important transport routes, the public transport provides service adequately usually only in between the centres and the peripheries, between the most significant towns and cities, and it is not adequate in serving the mobility to the direction of the low level centers of the micro-regions. With the improvement of the transport services of the sporadically located micro-villages, and the dead-end villages, the disimprovement of the service in between the centres and the

peripheries (with growing of the road-time, etc.) is not acceptable, so an other type of solution must be found. We can make the consequence, that the centre-periphery orientated passenger transport services (which serves the communication between the major settlements) must be separated from the feeder-type services (which serves the dead-end villages, and the peripherially located village-groups). The connection between the two levels of passenger transport services could be made on transfer stations. With this method the attraction range in employment of the county seat could be extended, the accessibility of the low level centrals, and the transport supply of the peripherially located micro-villages could be improved.

The introduction of the unified rental tickets in the suburban-featured transport should be regarded as one of the important duties in the favour of the maintenance and improvement of the public transport services; it is also reasonable to build additional connective road sections for shrinking the length of the coach-lines; the schedules of railway and coach transport should be optimalized and harmonized in the favour of improving the competitiveness of public transport.

▶ The financial maintenance of the public transport services are going harder. The decrement of the supply of the public transport, and the inadequate actions of the passenger transport policy (based on inadequate analyses) could lead to a situation, in which the importance of the private ways of communication increase forward, and collaterally the private passenger transport going to be less replaceable. It can not be right to approach the sustainability of the public transport services of the disadvantageous, peripherial areas through the way of the economic effectiveness of the public transport companies, going for the minimalization of the deficit. The negative effects of the inadequate passenger transport services in the disadvantageous areas could lead into an accelerating increment of the social costs, and also can start negative processes which hardly could be turned back. The reforming and improving of the public transport services are a necessitous (but on it's own not satisfactory) condition of a more harmonic regional development. In my opinion we can say that the sustainment and improvement of the public transport services can be declared as an important preventive instrument of the employment policy.

6. Possibilities of application of the results

In my opinion the scientific results of the dissertation are applicable in the case of forming regional public transport associations. In the dissertation I attempted to emphasize the importance of forming and maintaining an operable, more economical and more effective public transport system, and also the importance of securing the conditions of working outside the home settlements. For the confirmation I made studies over Baranya County, but the results are also relevant to other areas with similar spatial characteristics.

7. Published literature related to PhD topic

KERESZTES L L. 2004: A személyközlekedés, mint a munkaerőpiaci alkalmazkodás eszköze Délnyugat-Baranya falvaiban. In: TÓTH J. – TÉSITS R. (szerk.): Innovációk a térben – a társadalmi kommunikációtól az intézmények megújulásáig. PTE TTK Földtudományok Doktori Iskola, Pécs, pp. 43-60.

KERESZTES L. L. – JÁRÁSI F. 2006: A vasút szerepe a Baranya-megyei falusi lakosság munkaerőpiaci mobilitásának kielégítésében. Közlekedéstudományi Szemle, 2006/1. pp. 29-35.

KERESZTES L. L. 2006: Munkaerőpiaci lehetőségek és a területi alkalmazkodás Baranya falvaiban. Humánpolitikai Szemle, 2006/7-8. pp. 41-54.

KERESZTES L. L. 2006: Közlekedési ellátottság Baranya megye törpefalvaiban. In: BARANYAI G. – TÓTH J. (szerk.): Földrajzi tanulmányok a pécsi doktoriskolából V. PTE TTK Földtudományok Doktori Iskola, Pécs, pp. 231-240.

KERESZTES L. L. – JÁRÁSI F. 2006: Tanulmány egy baranyai mellékvonalról.
Sínek Világa 2006/3-4. pp. 28-32.

KERESZTES L. L. 2006: A munkaerőpiaci (területi) alkalmazkodás képessége Baranya megye falvaiban. Modern Geográfia, 2006/1. 13 p.
http://www.moderngeografia.hu/tanulmanyok/munkaeropiac/keresztesll.pdf

KERESZTES L .L. 2007: Falusi ingázók és célpontjaik – Baranyában. Tudásmenedzsment. Közlésre elfogadva.

KERESZTES L. L. – TÉSITS R. 2007: Regional labour market adaptation potentials in Baranya county villages. Geografski Vestnik. 79-2, 2007, Zveza Geografskih društev Slovenije, Ljubljana. Megjelenés alatt.

KERESZTES L. L. 2007: A helyközi autóbusz-közlekedés szerepe a napi ingázók kiszolgálásában – Baranya példáján. In: KOPÁRI L. – TÓTH J. (szerk.): Földrajzi tanulmányok a pécsi doktoriskolából VI. PTE TTK Földtudományok Doktori Iskola, Pécs. pp. 197-205.

KERESZTES L. L. – TÉSITS R. 2007: The study of the possibilities of daily commuting in an Underdeveloped Hungarian County. In: Kryńska E. (ed.) 2007: Labour market, unemployment. Universytet Łódzki, Łódź, 2007. pp 26-40.

KERESZTES L. L. – TÓTSIMON P. 2007: Változó településrendszer, és a vidéki közforgalmú közlekedés fenntartásának kérdései – Baranya megyében. Tér és Társadalom. 2007/2. pp. 85-93.

KERESZTES L. L. 2008: Public Transportation of rural commuters: Studies in Hungarian Geography. Modern Geográfia. 2008/4. 11 p.