
PUBLIC TRANSPORTATION OF RURAL COMMUTERS: STUDIES IN HUNGARIAN GEOGRAPHY

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There was an oversupply of labour in the Hungarian agrarian sector at the beginning of the 19th century, which also made this sector employee-release. There are no available accurate data from the time preceding the First World War, but all the evidences refer to the fact that this time unemployment was higher in the agrarian sector than in the industry (DÖVÉNYI Z. – TOLNAI GY. 1993). It can also be realised that in the interwar period there were more unemployed in the agriculture than in other sectors (TÉSTIS R. 2003). From the 1950s the demand for employees in the agrarian sector decreased due to industrialization. There was a general getaway from the sector as a consequence of collectivization and coercive appropriation. Thereby, the village was less able to ensure employment; its function remained a place for living. Masses of people crowded out from the agriculture tried to get a livelihood in the disproportionately improving industrial areas, thus a significant number of village people became daily commuters. The difference in commuting opportunities had a measurable impact on the formulation of settlement network, mainly because the inhabitants who got into a disadvantageous situation intended to move their residence to more advantageous areas (within their bounds of possibilities). Tracing back these events, they were the root cause of that dynamic intermigration which emerged in the county during the 1960s and 1970s. Significant number of people living in the peripheries moved to towns or to villages lying close to towns also to ease commuting. In the decades preceding the full construction of public transportation, beside the investments affecting a significant social-geographical mobility, public transportation differentiated the improvement of settlements to a higher extent than ever before (ERDŐSI F. 1985). This intermigration got moderated in the 1980s, but was still considerable.

After the change of the political system, the more or less formal intention to push the small villages into the background ended, but with the conditions of market economy, the decreasing employment possibilities, and with the closing of bigger economic units (workplaces) in the rural regions, the pressure on the settlement network kept increasing in a certain aspect. The closing of significant companies (previously offering employment) was usual in each sector. The demand for employees of central settlements decreased considerably. The big employer organisations generally dismissed their commuter employees first in order to dispose transportation costs (DÖVÉNYI Z. - TOLNAI GY. 1991).

The agricultural crisis and the abolishment of collectives sharpened the situation of village population; the developing private economies were not able to improve employment significantly. Today, the situation of villages is differentiated by the labour market situation (BELUSZKY P. – SIKOS T. T. 2007). The population of small settlements located far from the major employment centers suffers insurmountable disadvantages as they are not able to attract considerable employers

offering significant employment opportunities and thus provide jobs for only a small percent of their residents. It can mostly be explained with the geographical location of their homes and the lack of travelling possibilities. Corresponding to this, the situational energy deriving from the geographical locations of the settlements, and the ability to overcome the distance hugely determine the spatial mobility of workforce and the regional accommodation ability of the residents interpreted from this view, thus the future of the settlements (regions).

Therefore, the most important factor of commuting (in case of employment opportunity suitable for the worker's demands, skills and abilities) has always been the satisfactory level of transportation connections between settlements, as well as today. Recognising the importance and complexity of this problem (and of course the other settlement formulation effects of village people mobility), geography has always taken an important role in exploration of factors determining opportunities of village traffic facilities, improvement of transport system and daily commuting. In this short paper I would present the most important analyses carried out by Hungarian geographers in this field and the other relevant regional researches.

1. INVESTIGATION ON THE CONNECTION BETWEEN TRANSPORTATION ACCESSIBILITY AND COMMUTING

The researches on the accessibility and geographical location of settlements and the deriving advantages and disadvantages, that is to say situational energies can be linked to the researchers of geography. MENDÖL, T. (1963) summarized and presented in details the questions of traffic location that can be interpreted from the view of settlements (which expresses "*what kind of attributes determine the accessibility of a settlement from other settlements, other regions*" p. 439.) and accessibility. In his imposing work cited above he revealed the interpretation of situational energy (while noting that the name comes from *Cholnoky*), which, according to him, "*always means the advantage of traffic location*", and he mentioned that "*in traffic location characters of the accessibility of a given settlement are summarized*" (p. 458.).

People having a job far from their living places, and thus commuting on a daily basis, firstly calculate with the time spent on traveling and the amount of costs in measuring traffic opportunities. Both of the factors are influenced by the distance to be overcome, the quantitative and qualitative parameters of the available traffic roads, the endowment with traffic engines, and the characteristics of public transportation supply (number of routes, route frequency, road time, etc.). In the analysis of traffic accessibility built up by the listed factors that can be interpreted by the recognition of the population's labour market position, and its impact on socio-economic procedures, the most important role has also devolved on geography (traffic geography), as a

spatial science. ERDŐSI F. (1991) in his fundamentally significant work from the view of domestic communication-geography adjusted and summarized the concepts of traffic exploration, traffic endowment and traffic accessibility. (The interpretation of the concepts has done earlier [1983].) According to the definition of ERDŐSI F. the three components of transportation accessibility and transportation connection are the distance, the transport time and the route frequency. Although, according to his views "accessibility do not appear only as a general range, but also as a special range of individuals depending on their social conditions" (p. 17.). He keeps important to be clear during the analysis of transportation availability that whose accessibility conditions are examined.

With the aim of differentiation of domestic areas that can be viewed as peripheral in terms of transportation, BIBÓ I. and MATTYASOVSKY J. (1950) have already accomplished researches in the 1940s. In their work made as a government and town-planning recommendation, they put the emphasis on the fact that for villages a town with eligible range of functions should be in available distance even in case of repetitive daily cummuting.

The representatives of the geographic researcher laboratory in Szeged (MÉSZÁROS, R. – MRS. DÖBRENTÉ – CSATÁRI, B. 1975; KRAJKÓ, GY. – KAJDÓCSY, K. – MÉSZÁROS, R. 1976; KAJDÓCSY, K. – MÉSZÁROS, R. – CSATÁRI, B. 1979) have reached significant achievements in the measurement of the settlements' geographical location and accessibility and in the development of methodology in the 1970s. During their comprehensive researches they evaluated the transport-geographical location of settlements in the South-Plain and in Southern Transdanubia as economic regions. For the analysis of transport-geographical in light of road and train network they used the number of lines crossing the given settlements, the quality of roads, the number of routes, and the attainability time of settlements being the possible targets of the travel. Moreover, they took into account the ratio of the modification effect of the central settlements transport-geographical situation. As a result of the calculations made by the help of the computer the transport-geographical position of the Southern Transdanubian settlements, classified into qualitative districts. Researchers pointed to the fact that the choosing of factors to be used for the analysis is a really complicated problem. It is hard to decide, which factor in a certain situation with what weight should be taken into consideration.

In 1980 SCHWERTNER J. and PÁLFALVI J. evaluated the traffic accessibility of central settlements. SCHWERTNER J. (1985) examined the disadvantageous settlements in Hungary from the view of public transportation based on the information deriving from the analysis of timetables. Due to the map display of research outcomes settlements in Hungary with "edge-positions" became visible.

In his study TINER T. (1983) analysed the passenger situation of villages in Borsod-Abaúj-Zemplén County. With his research, he discovered the position of the villages in the traffic network of the county, their level of transportation devices endowment, and he analysed in details the traffic connections between settlements standing in different levels of settlement-hierarchy.

During the settlement particular analyses he evaluated the possibility of developing connections between settlements performing central functions and villages in their scope by the presentation of number of routes of common transportation, the travel time, the possibilities of choosing between transportation devices (rail, bus), and from the view of average cost-distance.

The analysis of the alternatives of residents living in villages, who can not find suitable employment opportunities, and their abilities to overcome the distance was given an outstanding notice in the past one and a half decade. During the 1990s more analysis assessed that the chances for employment of people living in rural settlements is rather influenced by the geographical location of living places than by the size of the settlements (FÓTI et al., 1991 and Mrs.DÚS OBÁDOVICS, Cs. 1997). More researches (BÓDI, F. and OBÁDOVICS, Cs. 2000) also reinforce that the employees living in settlements at least 10 km far from important towns and cities suffer disadvantage, because the employers take on the traveling costs less and less, as a factor increasing employee costs.

More studies also dealt with the evaluation of traffic endowment of the regions with tiny village settlement network (ERDŐSI, F. 1985; ERDŐSI, F. - HORVÁTH Cs.-NÉ - KOVÁCS K. 1986). The analyses supporting these works fully evaluated the transportation alternatives and the functions discovering transportation, not exclusively from the view of traffic due to employment. During the examination made in 1986 researchers analysed the quality of road network, rail network and common transportation services with the help of synthetic index calculated with mathematical-statistical methods. The alternatives of transportation were evaluated in between the villages and all of the central settlements.

Transportation endowment can be presented with the comparison of traffic supply and the demand for mobility. Although, the discovery of demand for transportation is a pretty hard task to solve, thus we hardly meet surveys regarding this. In case of some settlements in Heves County, TINER, T. (1985) examined the needs in connection with transportation and transportation habits based on questionnaire surveys among village people living there.

The analysis and evaluation of connection between transportation alternatives and daily commuting was also done in case of a certain microregions of Baranya, and villages in a certain settlement category (KERESZTES, L.L. 2004, 2006a).

2. RESEARCHES ON DEMAND FOR LABOUR, AND ON THE ABILITY TO OVERCOME THE DISTANCE

In the 1960s and 70s the regional differences in production efficiency, the development, and the inequality in advancement effected a significant intermigration. The researches on economic regions, hinterlands, and sphere of centers were given a significant consideration. These examinations covered the whole country. Certain studies (TÓTH J. 1972; TÓTH J. - DÖVÉNYI Z. - SIMON I. 1974; TÓTH J. - MOSOLYGÓ L. - TÁNCZOS-SZABÓ L. 1975) also pointed to the labour-force attraction of central settlements. These surveys evaluated the regional units of production indirectly also through migration. The scientific results of the hinterland-studies of TÓTH J. (1972) were utilized in the researches discovering the transport-geographical position of Southern Transdanubian settlements. BECSEI J., DÖVÉNYI Z. and SIMON I. (1974) analysed the most important tendencies and characteristics of labour movement in the case of Békés County. In the study the effect of transportation situation to commuting were also presented. With his survey, firstly based on the data of the Central Statistical Office, ERDŐSI, F. (1981) discovered the regional system of commuting in Southern Transdanubia, and the system of the hinterlands developed around the central settlements in the region. He evaluated the spread of the given employment centers, their dominance, and the effect of the ability to overcome the distance. The author also mentioned the migration due to the limited possibilities of transportation. Research and presentation of labour attracting areas of Pécs (ERDŐSI F. 1979) was based on the available statistical data, and was done based on the results of a comprehensive (covering all of the commuters) survey (KOVÁCS Á. 1982) made for the assignment of MTA-DTI. In her summing sociographic work examining the development of settlement network in Baranya, and the factors effecting that, she pointed out in details the effect of the changed structure of economic mechanism and demand for labour, and to the migration of workers looking for employment – partly through the presentation of available research results.

The evaluation of the effects of transportation costs to commuting based on calculations remained to economists. Several surveys examined the effect to the commuting of the connection between commuting and transportation costs, the distance between the living place and the possible workplace, and the occurrent compensation by the employers (KÖLLŐ, J. 1997, 2002, KERTESI, G. 2000, BARTUS, T. 2003). KÖLLŐ J. és KERTESI G. (2000) conceptualized a hypothesis, according to which parallel to the economic boom the unemployment rate could not decrease in the villages in the most disadvantageous areas, because the traveling cost is higher considering the

difference between the village and city wages. KÖLLÖ J. (1997) evaluated the possibilities of commuting also through the examination of public transportation alternatives, which results assisted the evaluation of labour market closeness, and in emphasizing its significance.

BARTUS T. (2003) points out in connection with the above mentioned commuting costs that they are inaccurate as the research was carried out at the level of the settlements without any details on the individuals. In his research, Bartus uses individual details and analyzes former hypotheses on the commuting costs based on the results of questionnaires. The most important results of his research: commuting is typically concomitant with the lack of commuting costs whereas providing commuting costs radically lowers the possibility of commuting. The possibility of commuting ranges 20-40% in the case of providing the costs. To phase out the high rate of regional unemployment employers are required to contribute to the expenses.

In his recent study, Köllő J. (2006) applied instrumental variables estimation to provide a more accurate picture on the relationship between rural unemployment and the accessibility of towns by public transport. One of the results of his research is to prove that disparity between the unemployment rates in the different settlements has grown since 1993 depending on whether they are well or poorly provided by public transportation. Therefore, there is an obvious connection between the level of travelling costs and the commuting facilities. In accordance with this, chances of equality are manifested in the qualitative and quantitative features of public transportation, which demands substantially less financial sacrifice from workers (and their employers) commuting long distances.

As far as this county is concerned, the impact of territorial adjustment to the labour market opportunities, mainly the effects of daily commuting (seen in the last century and since the change of regime) and also the territorial adaptation ability at the level of the settlements have been published (Keresztes L.L. 2006b, 2006c).

3. THE PROBLEMS OF PUBLIC TRANSPORT SUSTAINABILITY IN RURAL REGIONS

There are more overall analyses available about the reasons for inefficient operation in the present public transportation system, and the international experiences of its liberalization (for example: PÁLFALVI J. – VAS I. 2002; MARCSA I. 2005), from which it is worth to emphasize the work of MOLNÁR É. (2006). In this study, the relations are summarized between the uneconomic, less inefficient operation, the shortage of services, and the bondage of clientele. Although, it should be noticed that the analysis evaluates the results of public transportation liberalization mainly based

on an economic context, with less attention to significant regional differences can also be noticed in counties and small regions, and to cases, when the public transportation, because of the territorial facilities, really and manageable, can only be maintained as a social service. ERDŐSI F. (2005, and other works) and EHRLICH É. (2000, 2005) also dealt with this concept category in more details.

More overall studies were developed on the problem of maintenance and improvement of public transportation serving exactly the rural regions. Erdősi F. (2000) in his work he presents the change in transportation needs of people living in the country, and he analyses the relation between the advancement of villages and questions of traffic improvement. The author shows the problem of public transportation services of sparsely populated rural regions in details, and the main reasons for inefficiency.

Domestic researches and project efforts were attached to European programs addressed to improve the public transportation service of sparsely populated rural regions. During one of these, practical introduction with experimental attribute was also realized (ARTS CONSORTIUM 2002, analysing in details: FÜLE M.-PRINZ-JANKOVICS T. 2004), and there was such an examination, which could only remained in theory, because of the particularity in domestic juridical environment (TWIST-model, presenting: ERDŐSI F. - GÁL Z. - GIPP C. - VARJÚ V. 2007).

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