3 Modal split to work

The main source of the data on the mode of commuting to work and the choice of transportation is the population census, carried out in 2002. The census information may be somewhat dated, but they are the only data on the commuters’ choice of daily transportation for the entire country. The data also enable comparisons with the same data from 1981 and 1991. In this chapter only those daily commuters are examined who do not work in the same place as their permanent residence. If we took into consideration the commuters who live and work in the same settlement, the shares of automobile users would be lower.

A peculiar feature of the Slovenian form of daily commuting is the high percent of automobile use, a consequence of which is the uncompetitiveness of the public transport system’s travel times. According to the 2002 census, 78% of daily commuters travel to work by car, with an additional 7% as passengers. Only about a tenth of all commuters use the public transport system. In 2003, a survey sampling was carried out in Ljubljana and its gravitational hinterland about travel habits. The journeys were analyzed according to the purpose, choice of transportation and the time of day. The results for the modal split in the municipalities that tend to gravitate toward Ljubljana in terms of employment were very similar to the census results; 76% of commuters to work were drivers in their own automobiles. A more favorable modal split was shown with the commute of workers in the Ljubljana city municipality, where 58% of the commute were driving a personal automobile (Guzelj and Košak 2003).

Slovenia ranks on top of the EU regarding the use of automobiles. The European statistical data shows that in 2007, 86.2% traveled kilometers of the land transport were driven in automobiles.


Figure 5: Change in the use of public transportation of commuters from 1991 to 2002.
Daily employed commuters
Changes in the model split of public transportation users between 1991 and 2002

-18.0 to -24.9%
-25.0 to -29.9%
-30.0 to -34.9%
-35.0 to -39.9%
-40.0 to -44.9%
-45.0 to -55.0%

Authors of the content: Matej Gabrovec, David Bole
Authors of the map: Jerneja Fridl, Manca Volk
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0 25 50 75 km
European average is 81.9% and is exceeded only in Lithuania (EU Energy and transport in figures 2010). The rapid decline of the public transportation's role and the increased motorization are high even for European standards, which is especially worrying from the aspect of sustainable spatial development. With 514 cars per 1000 inhabitants, Slovenia ranks higher than the European average (470) and resembles the state in Austria (513) and Germany (504) (EU Energy and transport in figures 2010). The level and spatial arrangement of motorization is a good indicator of the economic circumstances and the values of the society as a whole. Municipalities in the Slovenian Littoral stand out, where according to data by the Statistical Office of Slovenia from 2010, the level of motorization is between 500 and 600 automobiles per 1000 inhabitants. Another such municipality is Trzin near Ljubljana, where the level was the highest in Slovenia (708). Suburbanized municipalities and economically more successful city municipalities are defined by above-average ratings; under-average are mainly older industrial centers which are facing numerous problems (population aging, unemployment, low income) and the least developed rural areas in Slovenia. The access to an automobile seems to be the value of society that dictates the standard of life, as the areas with the highest motorization in Slovenia have the lowest unemployment rate and the highest income. This process has been reversed in environmentally more »friendly« countries where the level of motorization is decreasing despite the high living standard, mostly due to the strengthening of environmental consciousness.

More troubling than the current state of transportation choice in Slovenia is the worrying trend of change in the last two decades. Figure 4 indicates a rapid growth of automobile use for commuting to work on account of more sustainable ways like using the public transportation system and non-motorized forms of traffic. The nineties saw especially fast changes, when the use of automobiles doubled on account of the public transportation system that lost four fifths of its daily commuters during this time. The railway saw less of a decrease, mainly because of lower prices and competitive travel times in comparison to bus transportation. The ratio of drivers to passengers is also unfavorable with car commuters; according to the data from the 2002 census it was 10:1. The changes of the modal split mark important regional differences. Figure 5 demonstrates a smaller decline of commuters by public transportation system in the west of Slovenia than the central region. A great decline can be observed particularly in the areas where the public transportation system is quite perfected and its use above-average. This leads to the conclusion that individual regions in Slovenia are in different developmental stages regarding the change of transportation. In western Slovenia the rapid decline of public transportation use already started before 1991, so the change is understandably less noticeable in the studied period. There seems to exist a certain time lapse. The gradual increase of automobiles in families means that one of the parents (or both together) commute to work by car in the first phase; in the second phase they each commute by separate cars; in the third phase, students also stop using the public transportation system and commute with their parents and get their own cars in their senior year of high school. In this way it is possible to simplify and say that western Slovenia is reaching the third phase, with a rapid decrease of public transportation among high school and university students, while eastern Slovenia is still in phase two. In this part of the country the commuters are using public transportation less and less, while the students are not following these tendencies yet. The abovementioned is a description of the period 1991 to 2002; the trends most likely continued after the census year, but there are no statistical data available.

The decrease of public transportation system users as well as users of non-motorized forms of traffic is a consequence of the traffic policy in this period, which focused mostly on the construction of new motorway infrastructure and dealt with the railway and public transportation infrastructure and other sustainable forms of traffic only on a declarative level. Consequentially, using the public transportation system has been assigned a derogatory meaning; for most Slovenians, it is seen as a service.
Daily employed commuters
Share of public transportation users
- 0.0 to 5.0%
- 5.1 to 10.0%
- 10.1 to 15.0%
- 15.1 to 30.0%
- 30.1% and more
Number of Commuters Employed in the Commune
- 0 to 25
- 26 to 50
- 51 to 100
- 101 to 500
- 501 to 2500
- 2501 to 10,000
- 10,001 to 50,000
- 50,001 and more
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intended only for underage pupils and the people who cannot afford an automobile. The Eurobarometer research further supports this way of thinking, in which EU citizens were asked whether they would use automobiles if the cost of fuel doubled. According to the research, Slovenians were the least prepared to change their habits, as only 9% of the interviewed people said they would drive substantially less and as many as 47% said they would drive just as frequently (Attitudes ..., 2006). The public transporters in Slovenia adapt their services to the users who do not have any other means of transport. On most routes the services are so poor from the aspect of a commuter with flexible working hours that they are only partly useable. There has not been enough attention paid to public transport on a national level; more ambitious projects started only in 2007 and they are still in the planning phases (Gabrovec and Lep 2007; Gabrovec and Bole 2009).

The choice of transportation when commuting to work and school differs greatly according to regions and municipalities in Slovenia. The percent of daily commuters who travel to work by bus or train exceeds 30% on certain routes, but has decreased below 1% in others. This data clearly shows that workers use public transportation for commuting to work only on those relatively few routes where it can compete with automobiles with regards to time and price.

Figure 6 shows a very low percent of public transport users in western Slovenia and in the Littoral, where it practically never exceeds 10%. This is a consequence of a higher level of motorization in this part of Slovenia and a sufficient number of parking spaces in both regional centers, Koper and Nova Gorica. On the other hand we can observe some smaller employment centers with shares of public transport that exceeds 30%. These are individual industrial centers where a large portion of the employees work in local factories. They are mostly companies with more than a thousand workers that organize bus transportation for their own workers or they collaborate with transport providers with coordinating time tables. Cerkno, Loška dolina, Semič, and Zreče stand out. In all these cases one employer stands out that provides more than half of the jobs in the municipality. The map also indicates a more favorable modal split in larger towns that are also regional centers than in smaller municipalities. Larger cities are connected with their hinterlands better; at the same time the increase of automobiles is contained by the shortage of parking spaces. It is also easier to organize public transportation in towns where the work process is uniform and the beginning and end of the work day is the same for the majority of workers: this is a common case in industrial factories, while the work process is less predictable in the service industry and the organization of public transport is consequently more challenging.

When analyzing the choice of transportation on individual routes, the frequency and speed of the public transport are key. Figure 7 demonstrates the percentages of public transport users on individual routes. The map indicates a few characteristics described above: the low percentage of public transport users in the Littoral and high percentages in industrial centers, especially routes towards Novo mesto, Velenje, and Murska Sobota. The most heterogeneous is Ljubljana, where the proportions of the shares on certain routes can be up to 1:5. The highest percent of public transport users are from the municipalities in the Central Sava Valley and Borovnica. These are exclusively routes with good railway connections. The travel times of passenger trains on these routes are comparable to automobiles or they are even shorter; in addition the frequency is suitable – there are trains to Litija leaving every half hour. It is therefore evident that a quality railway connection can be competitive. The municipalities Vodice and Komenda have the lowest shares of public transportation users in the direction Ljubljana. Both municipalities lack railway transportation and bus transportation is unsuitable because buses do not use motorways as automobiles do (Gabrovec and Bole 2009).

4 Conclusion

In the last decades Slovenians are traveling greater and greater distances to commute to work and school. This statement is supported by the census data from 1981, 1991, and 2002 as well as the statistical
registers that keep the workers’ information on the place of residence and place of work. Despite greater traveled distances, the travel time has been constant in the last twenty-five years. At first glance this realization is exciting. The possibility to overcome greater distances on a daily basis expands the commuters’ choice of jobs and schools, but also shopping centers and options for daily trips. This indirectly increases the quality of life. However, a more detailed analysis reveals the negative sides of the described progress. The public transport speed has been constant in the examined period. Its users have therefore not gained anything; not only that, their travel times are now slower than commuters in automobiles. The difference in automobile and public transport speed has constantly grown in the past decades. This is predominantly a consequence of motorway infrastructure construction and a simultaneous neglect of railways. With this, the public transportation system has become less competitive with time and its services have decreased because of less demand. The decreased competitiveness of the public transportation system has also led to a drastic decrease of its use: the percent of daily commuters to work with the public transportation system has decreased from 58% in 1981 to 10% in 2002 and the percent of automobile commutes has increased from 27% to 85% in 2002. The increase in automobile use has a negative impact on the environment. In addition, the increased dependence on automobiles has led to fewer public transport services and has also had negative social consequences. Those inhabitants who cannot afford to use an automobile due to health, financial, or other reasons are witnessing a decrease of their accessibility to work, education, treatment, and recreation. This contributes to greater social exclusion in society.

There are great regional differences in daily mobility changes in Slovenia. These differences are on the one side connected to the economic development and on the other to different measures of the traffic policy. The analysis of regional differences and individual good practices enables coordinated spatial and traffic planning that will promote sustainable forms of mobility.

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5 References
