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# JOBS CREATED OUT OF TALLINN HAVE NOT REDUCED COMMUTING

**Roland Mäe[1] ✉, Dago Antov[2], Imre Antso[3]**

*Dept of Transportation, Tallinn University of Technology,*
*Ehitajate tee 5, 19086 Tallinn, Estonia*
*E-mails: [1]roland.mae@ttu.ee; [2]dago.antov@ttu.ee; [3]imre.antso@stratum.ee*

**Abstract.** Although urban sprawl is relatively new process for Estonia which has not revealed itself to the full extent, in many European cities urban sprawl is recognised as a major challenge to quality of life. Due to the above mentioned negative aspects of urban sprawl in some countries the efforts are determined to restrain urban sprawl. Many studies have been undertaken to research the financial, ecological, cultural and social cost of urban sprawl in most of developed countries. This is the main reason, why declared in the majority of studies the theses, especially in the field of traffic and transportation, cannot be applied to assess situation in our country. Estonia has many geographical, economical, social and cultural peculiarities, which influence its traffic and transportation patterns as well as its urban sprawl rates. Economical crisis has shown the exigency to reduce drastically non-productive expenses and optimize productivity of labour. Thus the reduction of losses in traffic and transportation could be one of all possible solutions. In this article the commuting caused by urban sprawl has been analyzed. The second task is to find out in which range public databases are used to determine the demand of mobility.

**Keywords:** urban sprawl, commuting, traffic volume, mobility, territorial planning, public databases.

## 1. Introduction

On 17 June 2010, the European Council endorsed the Europe 2020 Strategy (hereinafter "the EU 2020 Strategy") for smart, sustainable and inclusive growth, setting out a vision of Europe's new social market economy for the 21st century. The EU 2020 Strategy rests on three interlocking and mutually reinforcing priority areas: smart growth, developing an economy based on knowledge and innovation; sustainable growth, promoting a low-carbon, resource-efficient and competitive economy; and inclusive growth, fostering a high-employment economy delivering social and territorial cohesion.

According to the report of Transportation Research Board travel demand models are deterministic, providing point-estimate forecasts. This approach is acceptable for solving simple problems, such as whether a new freeway should have four or six lanes. Today, however, metropolitan planning organizations face a much broader and more complex set of requirements and needs in their travel modelling than they did in the 1960s and 1970s. They must now account for or evaluate such issues as the following (Wachs 2007):

- motor vehicle emissions and vehicle speeds;
- induced travel;
- alternative land use policies;
- non-motorized travel (walking and bicycling);
- transportation policies, such as congestion pricing;
- cumulative and secondary impacts of transportation facilities;
- environmental justice or avoiding disproportionate adverse impacts on low-income and minority households or disproportionate distribution of benefits;
- economic development;
- emergencies due to weather, health, or threats to homeland security; and
- demographic changes.

Increases in trip lengths – unnecessary travel – is a form of inflation where more travel is „spent", while few if any additional needs are satisfied. In that sense, it is little different from economic inflation. But travel inflation is, in a sense, worse even than economic inflation since it leads not only to additional travel but also to additional pollution, fuel use, accidents, and deaths. Therefore, it makes logical sense that for a decrease of excess travel it is important to control land use and urban form (Black 2010). Otherwise, urban sprawl can easily destroy the viability of both urban and rural areas (Piorr *et al.* 2011).

Traffic jam is one of the side effects of urban sprawl. For example in US congestion causes for an average urban resident to spend an extra 34 hours of travel time and use 14 extra gallons (53 litres) of fuel, which amounts to an average cost of $713 per commuter (Schrank *et al.* 2011).

By definition urban sprawl is the growth of residential areas beyond the current spatial limits of compact urban development. Such sprawl necessitates that urban services and utilities be provided to areas where the population density remains low, thereby resulting in excessive costs borne by city taxpayers or on other customers of the utilities that are required to serve these areas. Burgeoning urban sprawl may even require the city or utility to purchase additional equipment (Black 2010).

The reasons for the development of urban sprawl are well known. The popularity of private cars makes living in low-density suburban areas more affordable or, simply, more profitable than inner city developments or urban renewal (Badiani, Tira 2009). On the other hand, living in a rural environment means that many of the goods, services and activities people needs are harder to access than in urban areas (Fitzgerald 2012).

The use of this land beyond the urban area for housing or economic activities is made possible because of a lack of land use control. If the land were zoned for non-residential or non-commercial activities (e.g. agriculture or open space) there would be no sprawl. In effect, although transportation is usually held responsible for urban sprawl, transportation facilities (specifically highways) only allow movement to or from areas beyond the periphery or our cities. Transportation in and of itself does not create sprawl, but transportation without land use control may facilitate it (Black 2010).

The definition of commute is to travel back and forth on regular basis. It is said that this designation stems from the early days of railroading, when operating companies, in order to attract steady customers through already existing suburban stations, "commuted" or reduced, the fare (Grava 2003).

The typical commuter belongs into the so called Anti-Environmental Group. This group has the lowest overall use of green modes, as well as the lowest walking and transit use, when examined separately. They have the longest one-way commute and the highest rates of auto availability. The group has no overall set of values that would encourage the move to a neighbourhood supportive of less auto dependency; thus they need not be seen as at all "conflicted." More than any other group, they really enjoy driving, love the freedom and independence that owning several cars brings, and need their car to get to where they need to go. More than any other group, they think that environmental concerns are overblown, and they are less willing to reduce driving to reduce dependence on foreign oil, less concerned about global warming, and less willing to take action to protect the environment. Of all groups, it would be hardest for them to reduce their auto mileage. More than any other group, it is important for them to have control over things that they do (Karash *et al.* 2008).

Authors' research is focusing on urban sprawl and mobility potentials at suburban areas. The paper describes commuting arising because of the urban sprawl as well as an assessment of the information quality and usefulness from public databases for the determination of mobility demands. The public databases used and analyzed in this survey, are databases of Estonian Tax and Customs Board, the Road Register, Statistics Estonia, and public transportation schedules as well. The present survey has the following goals:

- to assess the extent to which public databases correspond to travel demand estimation purposes and whether they are suitable for determining travel demand;
- to determine where the people living in Harju County work and where the people working in Harju County live;
- to find out how many new job positions have been established in the near vicinity of Tallinn and how many of these are manned with local inhabitants.

The following hypotheses have been created which are based on the goals mentioned above:

Hypothesis No. 1: the work places which are created outside Tallinn will not reduce commuting, in other words new working places are not filled by local people.

Hypothesis No. 2: public databases can be used for determining traffic demand, either instead of traffic count or in addition to that.

## 2. Data and methods

In our work we used the data from the following sources: Tax and Customs Board database, Estonian Road Administration (Road Register), Statistics Estonia, City of Tallinn, Department of Education, Elektriraudtee AS (commuter train company), and Harju Public Transport Centre.

The database of Estonian Tax and Customs Board is including the data about employers and employees who are registered in Harju County, which is the largest as to the population (542 975 people) and the second largest as to the total area (4333.13 km$^2$). The centre of the county is Tallinn, which is also the capital of Estonia. The data originate from 2010 and are impersonal, what means that they cannot be related to a specific person or company. The data are marked with the EHAK location code (Estonian Administrative and Settlement Classification) and the smallest settlement unit is the village. In the present paper, data have been aggregated to the level of parishes, that is, the data of villages that belong to a certain parish have been added together. Furthermore, it was calculated how many work places there are in the settlement unit and how many of these have been manned by local inhabitants and where the rest of the employees come from. Table 1 presents an example of the data received from the Estonian Tax and Customs Board, where:

T_ASU – residence of employee by EHAK code.
TA_ASU – location of working place by EHAK code.
NAME – place name by EHAK code.
ROWS – people who lives in T_ASU and working in TA_ASU.

The received data was compared with the counted motorized traffic volumes on the city borders and with the commuter train passenger data. The traffic data has been obtained from the annual survey conducted by Tallinn University of Technology and from the road register of Estonian Road Administration (teeregister.riik.ee) and the number of the users of the commuter train – data delivered by commuter train company Elektriraudtee AS.

In addition to the employees, the number of students who go to school, but live outside Tallinn, has also been analysed. Officially there are 1018 students studying in schools of Tallinn, but living outside Tallinn (Tallinn Education Department 2007) what makes 1% of all commuters.

The database of the Tax and Customs Board and the number of students most definitely does not correspond to reality as:

- the accounting of large companies is central, which means that the branches of a company may be located all over Estonia, but employees are registered in the head office (Tax and Customs Board);
- also, people do not necessarily live at the same address where they are registered to; for example, for the purposes of receiving a certain grant or for political purposes (Tooming 2010);
- similarly, the permanent address registration of children is also manipulated in order to register the child in a specifically desired school (Tooming 2010).

**Table 1.** Data example from Estonian Tax and Customs Board

| T_ASU | NAME | TA_ASU | NAME | ROWS |
|---|---|---|---|---|
| 0140 | Anija parish | 0735 | Sillamäe town | 1 |

Note. Table content explains that one employee the resident of Anija parish is working in Sillamäe town.

## 3. Analytical part

### 3.1. Traffic count *versus* database of Estonian Tax and Customs Board

Table 2 presents the results of the traffic counts executed by Tallinn University of Technology (Metsvahi 2010) during the morning (7:00–9:00) and evening peak hours (16:00–18:00) and calculated traffic in a twenty-four hour period on the roads crossing the city border. It comes out that a total of 31 539 vehicles daily commute between Tallinn and suburban areas which at the car occupancy rate of 1.4 person per car (Metsvahi 2001) makes 44 155 people, and in addition to this, 2173 commute daily by commuter train (data of Elektriraudtee AS) making it a total of about 47 300 people. There is no information available about the number of daily bus travellers. If we look at the schedules of the regional buses that serve in the immediate vicinity of Tallinn, it can be said that the number of bus travellers is insignificant. Poor public transport connection with the vicinity of the city is also pointed out in the surveys made

**Table 2.** Average annual daily and peak hour traffic at the cordon of city borders

| Street name | Annual daily traffic, passenger cars per day | | | Peak hour traffic on city-border 2009 | |
|---|---|---|---|---|---|
| | 1996 | 2002 | 2009 | 7:00–9:00 | 16:00–18:00 |
| Ranna tee | 9600 | 15 000 | 17 920 | 2650 | 2890 |
| Randvere tee | 1900 | 2850 | 3450 | 539 | 602 |
| Kloostrimetsa tee | 5000 | 3420 | 3450 | 485 | 559 |
| Narva mnt | * | 12 500 | 17 720 | 2481 | 2795 |
| Peterburi tee | 18 800 | 23 300 | 22 050 | 2390 | 2988 |
| Suur-Sõjamäe tee | 2000 | 3270 | 6890 | 967 | 1218 |
| Tartu mnt | 12 000 | 13 050 | 24 420 | 3000 | 3574 |
| Viljandi mnt | 6600 | 9890 | 14 770 | 1970 | 2239 |
| Männiku tee | 4000 | 8450 | 11 660 | 1443 | 1620 |
| Pärnu mnt. | 16 800 | 19 400 | 33 900 | 4162 | 4759 |
| Tähetorni | 3000 | 3290 | 3300 | 608 | 685 |
| Paldiski mnt | 8000 | 14 040 | 14 700 | 2523 | 2880 |
| Rannamõisa tee | 5600 | 12 700 | 17 300 | 2212 | 2428 |
| Vana-Rannamõisa tee | 1400 | 3400 | 5560 | 747 | 809 |
| Vabaõhumuuseumi tee | 1000 | 2360 | 6880 | 1434 | 1507 |
| Pilliroo | * | 3470 | 4900 | 778 | 840 |
| Rahu tee | * | * | 18 210 | 2564 | 2918 |
| Sum total | 95 700 | 150 390 | 227 080 | 30 953 | 35 311 |

Note. * – the road was not constructed or closed for construction.

by other countries. For example, 60% of the suburban residents of Vienna stated that they use the car because the public transport connection is poor (Klementschitz, Stark 2009).

According to the Tax and Customs Board, 34 359 people make work-related travels daily from Harju County to Tallinn and 21 145 people from Tallinn commute daily to a neighbouring local municipality outside of the city of Tallinn, making a total of 55 504 commuters. Residents of the northern local municipalities of Rapla County and the western local municipalities of Lääne-Viru County are definitely added to this. There are 235 732 work places in Tallinn, of which 136 204 are manned with people from Tallinn and other working places (99 618) are manned with people from outside Tallinn. It means that 43% working places of Tallinn are manned by non-residents. Fig. 1 shows a distribution of people who are working but not living in Tallinn between Estonian counties.

The consequences of residential suburbanisation and commuting to people transportation demand and traffic can be described using example of Viimsi municipality. Viimsi municipality is situated on Viimsi peninsula close to Tallinn (Fig. 2). The area makes it possible to realize an average people dream to have a private house on the coast near to Tallinn. Viimsi has high living quality and good reputation. Thus the municipality has been attractive place for living, especially amongst young and successful families. This phenomenon is related to the extreme lack of contemporary urban housing and a high quality living environment in the city. Therefore people who prefer the urban environment move to areas very close to Tallinn (Leetmaa 2008).

Due to great attractiveness a rapid housing development took place in the municipality during last decade and as a result the population growth was over 10 000 inhabitants. In 2001, Viimsi had an official population of 5758. In 2011, the population of the municipality of Viimsi was 17 093. The increasing number of inhabitants was mostly caused by migration from Tallinn. 90% of population growth was caused by migration and 10% by natural increase (source Viimsi municipality).

Traffic situation is mostly influenced by the rate of working age population and their transportation demand. 64% of Viimsi population are working age people (18–64 years old). Therefore approx 10 900 18 to 64 year old inhabitants live in Viimsi municipality. But not all of them are working. According to Estonian Tax and Custom Board 8028 working people live in Viimsi. Thus 47% of Viimsi population have regular job.

The increase of Viimsi population was affected by migration from Tallinn. But most of new residents are still connected with Tallinn working and using daily services there. Also lot of children who are living in Viimsi are studying in schools in Tallinn. 5705 residents of Viimsi municipality are working in Tallinn. 1361 local inhabitants are working in Viimsi municipality, who makes approx 17% of all Viimsi working-age people. 962 inhabitants are working in other municipalities.

Although business activity has increased there is a lack of workplaces and existing jobs are not attractive for local residents. In Viimsi municipality there are 5160 workplaces. But only 1361 local residents are working there. Local residents fill approx 26.4% of local workplaces. 2140 (fills 40.7% of workplaces in Viimsi municipality) Tallinn residents are working in Viimsi municipality. Thus in Viimsi municipality works more people from Tallinn than local residents. However the collected data can include mistakes. It is not obligatory to register place of residence in Estonia and the real living place can differ from Estonian Tax and Custom Register. Therefore part of the people who registered their living place according to Estonian Tax and Custom Board is Tallinn and who are working in Viimsi municipality can be living instead of Tallinn in Viimsi. Existing data did not allow estimating the share of those people.

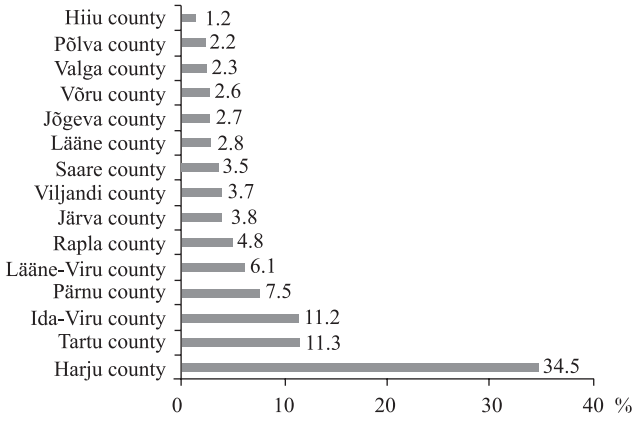


**Fig. 1.** Percent of employees living in different counties but having job in Tallinn


**Fig. 2.** Location of Viimsi municipality

Viimsi municipality is located on peninsula. The location of municipality restricts the possible connections with Tallinn. Four roads connects Viimsi municipality with Tallinn (Fig. 3).

In the morning peak hour (8:00 to 9:00 o'clock) the mentioned roads are used by 2415 vehicles. Most of vehicles are using Ranna road (which in Tallinn changes to Merivälja road and Pirita road) where in the morning peak hour there are 1490 vehicles. The share of other roads remains significantly lower:

– Ranna road: 1490 vehicles (61.7%);
– Pärnamäe road: 530 vehicles (21.9%);
– Randvere road: 299 vehicles (12.4%):
– Muuga road: 96 vehicles (4%).

Most of the people who are using transportation in the morning peak hour are on their way to work or to school. Thus most of the residents of Viimsi municipality are working in Tallinn. The prevailing direction of moving is to Tallinn. In the period between 8:00 and 9:00 o'clock approx 70% of vehicles' moving direction is to Tallinn. Studies have shown that the average usage of one car is 1.4 people in Estonia. Therefore approx 1500 people are using cars in the morning peak hour on their way to Tallinn to work or to school.

Approx 270 people are using public transportation at the same time. 190 people are heading to Tallinn and 80 to Viimsi. Thus public transportation share of all commuters who are travelling during the morning peak hour to Tallinn are approx 11.3%.


**Fig. 3.** Roads to Tallinn

In the morning period travelling direction to Tallinn is prevailing and in the evening period – to Viimsi municipality. In Viimsi municipality is not enough workplaces for local residents and existing jobs are not attractive for them. Although business activity and amount of workplaces have increased it is still not enough to change people transportation needs and travel behaviour.

The consequence of suburbanisation and commuting has major impact on transportation system and traffic situation. Increasing commuting rate has led to increase of traffic volume and also to traffic congestions. Average speed of traffic declined continuously until 2007 when traffic situation were the worst since the beginning of suburbanisation. Fig. 4 shows that it took twice as long in 2007 to drive the same distance that in 2003. Then on Pirita road a public transportation lane was built and the activated park and ride system. These changes helped to increase public transportation usage and also diminished traffic congestion range.

However, it can be stated that the results of traffic count and the calibres of the data of the Tax and Customs Board are the same, what means that the data of the Tax and Customs Board are suitable for evaluating general population trends, compiling action plans, etc. For example, on the basis of the data of the Tax and Customs Board, it is possible to calculate the travel lengths of commuters. It means that the data have to be accurate to a village level and in case of Tallinn, to a city district level. The cost and duration of the travels can also be calculated which in turn could be of help at the planning of public transport.

### 3.2. Jobs created outside Tallinn

Table 3 presents the data received from the Tax and Customs Board about the place of residence and work of people in Harju County which have been added up by parishes. The


**Fig. 4.** Change of traffic speed between years 2003 and 2009

first column states the name of the local municipality, the second column shows the number of residents in the given municipality, the third shows the number of work places in the municipality, the fourth shows the number of employees in the municipality, the fifth shows how many local people work in their place of residence, the sixth column shows the percentage of local people working in the municipality, the seventh column indicates how many employees come from Harju County, the eighth how many employees from other counties, and the ninth column shows the percentage of employed people in the entire population of the municipality. In Tallinn city, Rae parish and Saku parish, there are more work places than employees, what means that ideally all residents of said municipalities could work in their place of residence.

The proportion of local residents in the companies located in the municipality is illustrated in Fig. 5.

Table 4 presents the data about the changes of the number of registered companies, 2000 to 2009. This data is based on the contact address indicated by the business operators themselves. Growth was the largest in Rae parish (425%) and by number in Tallinn city where 11 987 new companies have been established in 10 years due to this database.

When comparing the data in Tables 4 and 3, a clear connection (Fig. 5) can be found: in the local municipalities where the number of companies over the past 10 years has increased the most, the occupancy of local residents in local companies is modest. For example, in Rae parish the number of companies has increased by 425% in 10 years, but only 13% of local residents work in the parish. Based on this fact, it could be stated that the jobs created out of Tallinn have not relieved the commuting emanating from urban sprawl, that is, these jobs have not been manned with local residents in general. The main reason of this phenomenon is because of the size of towns in Estonia, especially in and near by the city of Tallinn. Thus the distances between the home and workplace are rather short and the travel times are relatively small as well. This situation does not force labour force to change

**Table 3.** Summary of the data of the Tax and Customs Board and Statistics Estonia about people's work places and places of residence in 2010

| Local municipality | Residents | Work place | Employees | Of which local residents | Local people, % | Of which employees of Harju county | Of which employees from other counties | Employment rate, % |
|---|---|---|---|---|---|---|---|---|
| Viimsi parish | 8868 | 4413 | 6729 | 1130 | 26 | 3728 | 685 | 76 |
| Aegviidu parish | 873 | 146 | 326 | 77 | 53 | 102 | 44 | 37 |
| Anija parish | 6219 | 1178 | 2286 | 915 | 78 | 1134 | 44 | 37 |
| Harku parish | 7128 | 2698 | 4874 | 752 | 28 | 2160 | 538 | 68 |
| Jõelähtme parish | 5258 | 1911 | 2501 | 590 | 31 | 1659 | 252 | 48 |
| Keila parish | 3795 | 506 | 1846 | 140 | 28 | 447 | 59 | 49 |
| Kernu parish | 1672 | 240 | 762 | 164 | 68 | 215 | 25 | 46 |
| Kiili parish | 2530 | 707 | 1828 | 285 | 40 | 591 | 116 | 72 |
| Kose parish | 5703 | 1051 | 2270 | 755 | 72 | 967 | 84 | 40 |
| Kuusalu parish | 6371 | 1414 | 2622 | 848 | 60 | 1196 | 218 | 41 |
| Kõue parish | 1587 | 321 | 620 | 180 | 56 | 264 | 57 | 39 |
| Nissi parish | 3237 | 449 | 1110 | 288 | 64 | 388 | 61 | 34 |
| Padise parish | 1733 | 471 | 763 | 231 | 49 | 420 | 51 | 44 |
| Raasiku parish | 4346 | 1168 | 1832 | 481 | 41 | 896 | 272 | 42 |
| Rae parish | 8329 | 8727 | 5110 | 1125 | 13 | 5979 | 2748 | 61 |
| Saku parish | 7510 | 4180 | 3667 | 893 | 21 | 2938 | 1242 | 49 |
| Saue parish | 7532 | 3192 | 3719 | 583 | 18 | 2307 | 885 | 49 |
| Vasalemma parish | 5008 | 972 | 885 | 181 | 19 | 592 | 380 | 18 |
| Keila town | 9389 | 4080 | 4196 | 1413 | 35 | 3444 | 636 | 45 |
| Loksa town | 3405 | 395 | 845 | 283 | 72 | 382 | 13 | 25 |
| Maardu town | 16531 | 4864 | 6359 | 1623 | 33 | 4426 | 438 | 38 |
| Paldiski town | 4133 | 919 | 1543 | 597 | 65 | 886 | 33 | 37 |
| Saue town | 5187 | 2258 | 2537 | 531 | 24 | 1807 | 451 | 49 |
| City of Tallinn | 398 594 | 235 732 | 157 349 | 136 204 | 58 | 170 563 | 65 169 | 39 |

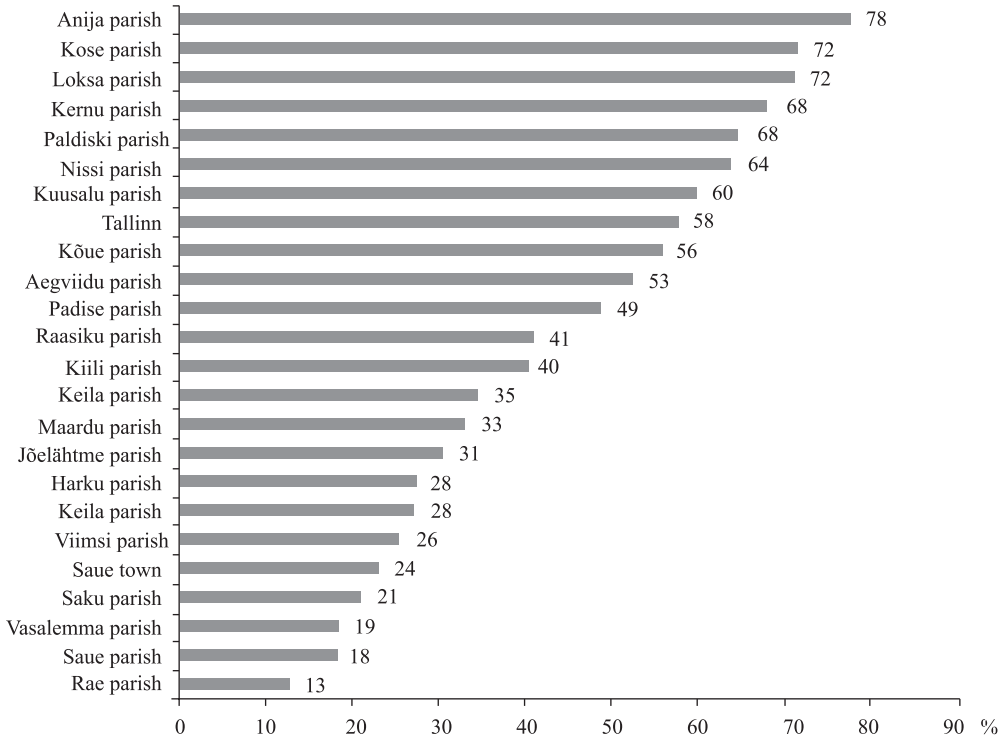


**Fig. 5.** The percent of jobs which are filled by local residents

**Table 4.** Number of companies in local authorities

| Local municipality | 2000 | 2005 | 2009 | Growth, % |
|---|---|---|---|---|
| Rae parish | 189 | 378 | 992 | 425 |
| Kiili parish | 73 | 161 | 323 | 342 |
| Kernu parish | 23 | 64 | 97 | 322 |
| Anija parish | 50 | 145 | 201 | 302 |
| Saue parish | 191 | 378 | 637 | 234 |
| Keila parish | 66 | 124 | 214 | 224 |
| Viimsi parish | 437 | 816 | 1368 | 213 |
| Jõelähtme parish | 131 | 256 | 356 | 172 |
| Nissi parish | 48 | 95 | 126 | 163 |
| Saku parish | 230 | 369 | 593 | 158 |
| Raasiku parish | 81 | 148 | 207 | 156 |
| Vasalemma parish | 26 | 29 | 56 | 115 |
| Keila town | 223 | 342 | 477 | 114 |
| Paldiski linn | 51 | 74 | 105 | 106 |
| Padise parish | 50 | 83 | 102 | 104 |
| Kose parish | 125 | 193 | 253 | 102 |
| Saue town | 215 | 317 | 432 | 101 |
| Kuusalu parish | 193 | 266 | 353 | 83 |
| Aegviidu parish | 27 | 39 | 48 | 78 |
| Maardu town | 416 | 550 | 733 | 76 |
| City of Tallinn | 23 907 | 28 696 | 35 894 | 50 |
| Kõue parish | 44 | 59 | 65 | 48 |
| Loksa town | 53 | 47 | 56 | 6 |

Source. Estonian Statistics

their place of residence when having a new job, in general terms; it also means that people do not consider the commuting to be a big problem.

In addition, it can be said that the closer a municipality is to Tallinn the smaller the percentage of local residents in the work places of their place of residence.

Figs 6 and 7 are aimed at illustrating the urban sprawl process. The figures show how working-age people (15–64 yrs) have moved across local municipalities in 10 years. A certain part of the working-age population has moved out of Tallinn to the local municipalities in the immediate vicinity. The same tendency has occurred in Lithuania as well: in recent years most investments are allocated to the largest Lithuanian cities which, from the socio-economic point of view, are the most developing. This

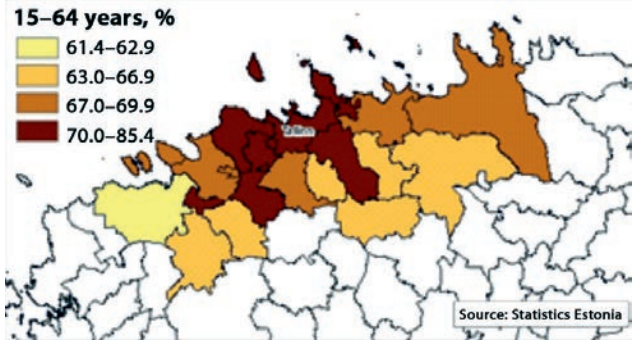


**Fig. 6.** Proportion of working-age people in local municipality units on 1.1.2000 (Source: Statistics Estonia)

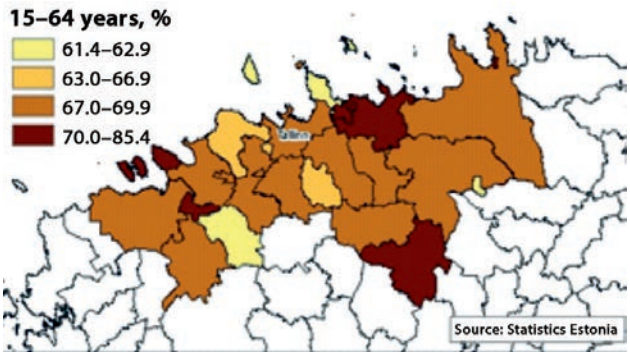


**Fig. 7.** Proportion of working-age people in local municipality units on 1.1.2010 (Source: Statistics Estonia)

causes the increasing differences in urban development and human welfare (Skrodenis *et al*. 2009).

## 4. Conclusions and results

In conclusion, based on the traffic count, the data of the Tax and Customs Board and public databases that the hypotheses set up were mostly confirmed and that the following conclusions are drawn from the article.

Jobs created out of Tallinn will not reduce commuting, that is, work places will not be manned with local people.

The closer a local municipality unit to Tallinn the fewer local people work there (in their own local municipality).

The data of the Tax and Customs Board and public databases can successfully be used, that is, the data are suitable for evaluating general population trends, compiling action plans and plans and also for planning public transport.

Intersections on the city-border of Tallinn are not congested only by the drivers who live outside Tallinn and drive there to work, but also by the drivers who live in Tallinn and drive outside to work.

The routes Tallinn–Tartu, Tallinn–Narva and Tallinn–Pärnu have equal or sometimes even better public transport connections than Tallinn with its neighbouring local municipalities.

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