

Location as the reason for the problems of old industrialised settlements

The Case of Estonia

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Abstract

In this paper we will chart the problems of small single-company (so called mono-functional) industrial settlements in post-socialist Estonia. The major research question asked will thus be whether the disadvantageous location of these industrial plants is the reason for problems in such settlements. Using the notion of gravity models we will calculate the distance factors of such settlements in relation to larger centres, and compare them across different groups of different kinds of settlements. The conclusion arrived at is that advantageous location (location close to a larger centre) is a necessary though not a sufficient condition for guaranteeing the development and success of settlements. The main determinant factors in the success of a settlement are the fulfilment of the conditions for a good social and economical environment, while it is undoubtedly the case that a healthy environment favouring the growth and deployment of entrepreneurial skills develops more easily in settlements located nearer to larger centres.

Keywords: Industrial location, industrial areas, local development, gravity models, mono-functional economy, transition economy, and Eastern Europe.

General characterisation of Estonian mono-functional settlements

As the results of the November 1999 conference held in Krakow on the problems of structural change in Central and Eastern Europe with regard to old industrialised cities and regions described, 3 different types of industrial areas exist in the (CEE) Central and Eastern European countries (Network of Spatial Research Institutes in Central and Eastern Europe, 1999).

- Multi-functional metropolises. The cities with suburban areas where the economy is a mixture of the industrial and tertiary sectors.
- Oligo-functional regions. Larger industrial districts where the industrial agglomerations vary along with rural and other areas.
- Mono-functional settlements. The small towns and villages where only one branch of economy exists and perhaps even only the one single enterprise.

The first two types of industrial areas are also characteristic of the western-European market-economy countries, the third one is however specific to the CEE transition countries. We can also see the aforementioned three types of industrial location areas in a small country such as Estonia:

- Larger centres (Tallinn, Tartu, centres of counties).
- The most easterly part of Estonia: Ida-Virumaa.
- The so-called “mono-functional” (single-enterprise) settlements.

Given that the problems in last two areas are much more serious than those in the first one, it is pertinent to ask, *whether the disadvantageous location of industrial plant is the reason for such problems*. These mono-functional settlements are among the most interesting industrial location spaces in Estonia. They are generally small towns and villages (300 – 10 000 inhabitants), in which during Soviet times only one industrial enterprise provided employment for almost all the inhabitants of the settlement. The official criteria fixed by the Estonian government for this status are:

- At least 50% of employees in the settlement are employed in one single enterprise (mono-enterprise) or in one branch of industry.
- This enterprise is industrial.
- The settlement has at least 300 inhabitants (Estonian Ministry of the Interior, 1997b).

There are thirty-four Estonian settlements that fall in line with these criteria. They are located in all districts of Estonia, though for the most part they are concentrated in Central Estonia around the Tartu-Tapa railway and in the most easterly region of Ida-Virumaa. Indeed this issue is just one of a host of structural problems faced by this most industrial area of Estonia (*see figure 1*).

It should be noted however that not all of these settlements are typical factory towns housing only the workers of the local industrial enterprise. In some settlements we see the existence of the hidden economy, usually the self-sustained natural one-household farming, besides the major industry, where such “outlets” provided an essential alternative source of living if and when the dominant industrial plant got into difficulties. Indeed of the aforementioned thirty-four settlements – as defined by the Estonian Ministry of the Interior – only around eleven are of a typical “proletarian”

nature. These are as follows; Tootsi, Puhja, Võhma, Järvakandi, Kehra, Loksa, Aseri, Kiviõli, Sompa, Oru, Viivikonna (Traks, 1998).

During the soviet period, of these thirty four settlements were dominated by the food industry, five by the peat industry, five by the wood industry, four were involved in the production of building materials, two were involved in the metallurgical, mining or textile industries, and one in the cellulose and paper industry, shipbuilding or mechanical engineering sector. Currently the situation is somewhat different as of course many "Soviet-era" enterprises have shut down, thus we cannot easily now determine the dominating branch of economy in these towns. Nevertheless, because the problems of these settlements are rooted in the structure of the economy in former times we must then give primary consideration to the former structure of the economy.

In comparison with the problems of large industrial areas in Western countries and elsewhere the branch approach dominates, however in the case of *small settlement analysis* it is not particularly fruitful. The general trends of industrial branches do not adequately reflect the possibilities for small settlements, where we can really speak of single enterprises. We cannot therefore predict the chances of single enterprises in small settlements on the basis of general possibilities with regard to industrial branches throughout the world. In small districts institutional aspects play a much more important role as regards the relations and rules of activity between enterprises, co-ordination forms and power relations between enterprises. Adequate relations between enterprises make it possible to find a niche in decreasing branches, though the success of a branch does not guarantee the success of a single enterprise in such specific conditions.

Two of the Estonian mono-functional settlements, namely Võhma and Oru, underwent a significant period of crisis in 1996-97, as the dominant enterprises in these areas went bankrupt.¹ Moreover in 1998 a further three enterprises found themselves in difficulty due to ongoing problems in the Russian market (Salme, Virtsu, Kõrgessaare) while during the same period, a further two enterprises also got into difficulty (Puhja, Kiviõli) as unfavourable market situations combined with management failures to severely hamper the businesses concerned.

The estimated unemployment rate in these settlements was 2.2-33.6% (Ministry of Interior of Estonia, 1997a) with an arithmetical average of 13.4%, which was slightly higher than the Estonian average at that time though the raw figures may not tell the true story as of course unemployment was particularly high in some settlements while for others the danger remained of them rather quickly falling into a similar situation. The Estonian government finally took up this issue in 1999 unveiling its programme for mono-functional settlements² which sought to finance business projects and projects for improving the business environment in such settlements. More recently, however, this programme was replaced by a programme for industrial areas, primarily targeting Estonian largest industrial district – Ida Virumaa – and a number of other industrial settlements elsewhere in Estonia.

Some of the enterprises found in the Estonian mono-functional settlements under discussion here were created in the 19th century, though most of them were founded during the Soviet period, especially in the 1950s and 1960s. The settlements

themselves were also in many cases created, or have benefited from significant growth in the intervening period, as residences for the workers from these “Soviet-era” factories. The main reason for the choice of location for many of these enterprises related to their proximity to an important raw material or energy resource. During the soviet period this was often the deciding factor along with the subjective decision-making processes of Soviet bureaucrats.

Changes and spatial patterns in the post-socialist economy

The difficulties faced by the old industrial areas across Europe are of course intimately connected to the changes in the nature of the economy (see for example Massey, 1988); this is also true for Estonia. The problems of mono-functional settlements however first appeared in connection with the radical economic and social changes brought about by the transition period from a socialist to a market economy. In Estonia as in the other Central and Eastern European Countries, we may however speak of three different transition process occurring side-by-side and roughly at the same time.

- Post-socialist transition – the transition to the market economy changed the former mode of economic relations.
- The transition from an Eastern-bloc outlook (i.e. towards Russia) to a more Western orientation saw former markets being lost or simply drying up. Moreover, the new markets that became available assume the need for new kinds of relations, relations that would take time to learn.
- Post-industrial transition – the ongoing process of essential changes in economic life, in the transition countries as well as in the developed industrial countries. Though the problems of old industrial areas in post-socialist countries are primarily caused by the two transition processes mentioned previously, in the search of solutions we cannot ignore the changes in the market-economy countries themselves, particularly in relation to the rise of the information society and ongoing globalisation. However, some authors argue that “the decline of old industrial areas in Central and Eastern Europe is by no means the same in character and origin” as the decline of old industrial regions and towns in Western Europe during the late 1970s (Domanski, 1999). Nevertheless, industrial areas in the developed market-economy countries do face similar problems to those in post-socialist countries. Old industrial districts are not attractive as regards new economic activities. In Estonia moreover the three transition processes are often inter-mixed and it is not always possible or necessary to separate them.

In comparison to the Western countries the problems of the old industrial districts in the transition countries are often much more acute, particularly in relation to the contrast between them and the more highly developed areas of the country. In the western countries the location of industrial plants to peripheral districts was a result of an approach to regional policy based on growth poles theory (Oscarson, 1989), which to some extent have nevertheless had to take into account basic market factors. However, in the communist countries the main reason as regards the choice of location for new industrial developments was usually some rational criteria (often closeness to

some raw material or energy resource), though sometimes the single most important deciding factor could even be the subjective will of bureaucrats.

So in communist countries many enterprises were located to settlements without the functions of a normal social and economical centre (Luse *et al*, 1998; Kovacs *et al*, 1998) and often without even the tradition of this kind of activity (Uhril, 1998). The concentration of the management in such firms was higher than in fordist-type capitalist economies, while production and other related activities were predominantly concentrated into large corporations usually with a fixed and inflexible hierarchical structure. Moreover, production relations outside the company were fixed by state agencies (see for example Soulsby *et al*, 1996).

In order to generate indigenous self-sustained development, economies should be capable of providing adequate links and networks around the main production to achieve higher value added activities and to secure their positions in the markets. Because of the agglomeration effect networks need to be localised (Indergaard, 1996; Morris, 1991). The “ideal” type of production system is both stable (co-ordinated and secure for all participants) and competitive (committed to efficiency and quality improvement) (Hayter, 1997). In the next section we see that because of disadvantageous location and strongly hierarchical production systems many of Estonia’s mono-functional settlements simply do not possess such characteristics.

The relationship between the problems of transition and location in Estonian mono-functional settlements

We can see from *table 1* that it is often characteristic of Estonian mono-functional settlements to have low levels of entrepreneurial activity. The development of small-scale entrepreneurship is often restricted by the disadvantageous location of individual settlements, by the fact that the local market is simply too small to sustain the business, and on occasion also by opposition from the dominant enterprise in the area. Moreover, the mono-enterprise often has control over the infrastructure of the settlement; while it can also often restrict access to the resources needed by new enterprises trying to enter the field. The placing of such restriction can be either direct or indirect (i.e. through price discrimination or other unfair competition measures). Moreover, the agents of the dominant enterprise often hold the majority in the local municipality parliament, making it possible for them to control the decision -making process as regards the development of entrepreneurship in the area (Ministry of Interior of Estonia, 1997a).

*Table 1. Estimations of problems in the Estonian mono-functional settlements in 1997*³

Problem	critical problem	Large problem	medium problem	small problem	not a problem
Low entrepreneurial activity	2	17	11	0	0
Low citizens-initiation	1	16	12	2	0
Insufficient public transport	1	2	10	12	5

New enterprises often suffer from a lack of capital. Indeed, in many problematic settlements a business environment favouring entrepreneurial activity has simply not

emerged, as such the basic synergies needed in the development of entrepreneurial skills are lacking, and the restrictive practices of the dominant enterprise often burden the town or settlement with a bad image, that once acquired, is difficult to lose (Ernits *et al*, 1998a).

Given the low levels of entrepreneurial skills and the dominance of mono-enterprises in Estonia the country is also characterised by a lack of internal competition. Indeed this can often be seen as a vicious circle, as low levels of knowledge and the lack of internal competition cause, and are symptomatic of, low levels of innovativeness (Ernits, 1998b).

Many dominant enterprises in mono-functional settlements are however now in serious difficulty. The reasons for such problems are numerous: Instability or uncertainty in the production market, problems with privatisation or with restructuring, lack of investment, political uncertainty as regards Estonia, too strong or simply unfair competition, inability of management to manage in the new conditions (the wrong allocation of liquid assets, inadequate contracts etc.), owners of the enterprise live outside the district and do not consider the localities' special circumstances, raw materials are becoming exhausted. Excluding the final two entries on this list we can see that these issues predominantly relate to the problems of a transition economy. Indeed, many of the above-mentioned problems are often taken together and regarded as a single complex.

Given the previous description, the question arises, what role does location play in the problems of such settlements. To what extent is location the reason for such problems? To research the significance of location as the reason for the problems experienced we can use the notion of gravity models, calculating distance factors and comparing them across groups of settlements with different success rates. The distance factor shows us the relative distance from the larger centre, i.e. to what extent does the settlement in question belong to the sphere of influence of some larger centre.

$$DF = \frac{D_{fc}}{N}, \text{ where:}$$

DF is the distance factor

D_{fc} is the distance from the centre in kilometres

N is the population of the centre

In the case of several potential centres the centre that gives the smallest possible factor is selected. In *table 2* we can see the centres, distances, and distance factors for different settlements. The distances are usually calculated from the centre of the settlement to the border of a central town. In the calculations shorter distances are often used between the centres and settlements than are usually to be found by utilising road or railway. Moreover, given the problems in Estonian official statistical accounting we cannot put unlimited trust in the recorded population numbers for the central towns. In some cases distances may not be measured precisely, however they are approximate enough for us to undertake interpretations that reflect the underlying reality of the situation.

Table 2. The centres, distances, and distance factors for Estonian mono-functional settlements

Settlement	Centre with the smallest distance factor	Distance from centre (km)	Number of population in centre ⁴ (thousands)	Distance factor
Kehra	Tallinn	33	420.470	0.08
Turba	Tallinn	40	420.470	0.10
Sompa	Kohtla-Järve	8	68.533	0.12
Oru	Kohtla-Järve	9	68.533	0.13
Loksa	Tallinn	58	420.470	0.14
Lehtse	Tallinn	69	420.470	0.16
Palivere	Tallinn	66	420.470	0.16
Järvakandi	Tallinn	75	420.470	0.18
Aravete	Tallinn	76	420.470	0.18
Taebbla	Tallinn	77	420.470	0.18
Sindi	Pärnu	10	51.807	0.19
Moe	Tallinn	84	420.470	0.20
Tamsalu	Tallinn	92	420.470	0.22
Puhja	Tartu	22	101.901	0.22
Kunda	Tallinn	101	420.470	0.24
Koeru	Tallinn	104	420.470	0.25
Rakke	Tallinn	113	420.470	0.25
Lavassaare	Tallinn	111	420.470	0.26
Tootsi	Tallinn	116	420.470	0.28
Võhma	Tallinn	120	420.470	0.29
Aseri	Tallinn	121	420.470	0.29
Püssi	Kohtla-Järve	20	68.533	0.29
Kiviõli	Tallinn	138	420.470	0.30
Virtsu	Tallinn	126	420.470	0.30
Peipsiääre (Kolkja)	Tartu	37	101.901	0.36
Rõngu	Tartu	37	101.901	0.36
Kõrgessaare	Tallinn	173	420.470	0.41
Viivikonna	Kohtla-Järve	30	68.533	0.44
Mõisaküla	Tallinn	189	420.470	0.45
Mustvee	Tallinn	190	420.470	0.45
Linna	Tallinn	ca 210	420.470	0.50
Salme (Läätsa)	Tallinn	238	420.470	0.57
Veriora	Tallinn	ca 250	420.470	0.59
Mõniste	Tallinn	ca 295	420.470	0.70

In attempting to divide the settlements into groups defined by rate of success we can use the division criteria used in the profile-study (Ministry of Interior of Estonia, 1997a). In this study the mono-functional settlements were assigned in terms of the probability of a crisis occurring in the dominant enterprise and by the share of the dominant enterprise (dominant branch) in the total number of work places in the settlement concerned. In addition to these criteria we also consider the division of the actual share of those unemployed, and the dependence of the settlement's own infrastructure on the dominant enterprise. The general characteristics here are the

influence of the mono-enterprise on the settlement in question and the probability of a crisis occurring in that mono-enterprise (tables 3 and 4).

Table 3. The division of Estonian mono-functional settlements and their distance factors

Group	Small influence of mono-enterprise	Medium influence of mono-enterprise	Big influence of mono-enterprise
The settlements in the crisis-situation	Koeru 0.25		Oru 0.13 Võhma 0.29 average 0.21
The settlements with assumptions of the crisis	Rakke 0.27	Kõrgessaare 0.41 Lehtse 0.16 Tamsalu 0.22 average 0.26	Turba 0.10 Aseri 0.29 Kiviõli 0.30 Sompa 0.12 Viivikonna 0.44 Virtsu 0.30 Moe 0.20 Lavassaare 0.26 Tootsi 0.28 Salme 0.57 Peipsiääre 0.36 Puhja 0.22 Mõisaküla 0.45 average 0.30
The declining settlements	Mustvee 0.45	Püssi 0.29 Veriora 0.59 Linna 0.50 average 0.46	Järvakandi 0.18 Rõngu 0.36 Mõniste 0.70 average 0.41
Developing/successful settlements	Aravete 0.18 Taebla 0.18 Sindi 0.19 average 0.18	Kehra 0.08 Loksa 0.14 Kunda 0.24 average 0.15	Palivere 0.16

Table 4. Average distance factors of Estonian mono-functional settlements

Group	Small influence of mono-enterprise	Medium influence of mono-enterprise	Big influence of mono-enterprise	weighted average
The settlements in the crisis-situation	0.25		0.21	0.22
The settlements with assumptions of the crisis	0.27	0.26	0.30	0.29
The declining settlements	0.45	0.46	0.41	0.44
Developing/-successful settlements	0.18	0.15	0.16	0.17
Weighted average	0.25	0.29	0.30	0.29

In terms of results we can see slight differences depending on the extent of the influence held by the mono-enterprise over the settlement. Nevertheless, the most significant differences appear as regards the rate of success of the settlements. The average distance factor is clearly larger in the group of decreasing settlements, while a slight difference also occurs for the group of successful settlements. These “successful settlements” are without exception located relatively close to the main centres. Notwithstanding this however final conclusions cannot be determined without a deeper qualitative analysis of this issue.

The positive (though not particularly strong) correlation between distance and the influence of mono-enterprises shows us that the districts with a one-dimensional economy are most often formed in peripheral areas. Indeed it is in this kind of area that such economic structures form most easily as they are generally viewed as not being able to attract alternative or supporting activity. Declining settlements are those without clear “crisis assumptions” but with an already high level of unemployment. There are several settlements in this group where the farming economy exists besides the dominating industrial plant. Such farming enterprises are usually of the self-sustaining, subsistence one-household farming type, with the entrepreneurial culture and environment formed by this. This type of economy is generally not however able to integrate into networking systems that guarantee openness etc, thus leading to questions over the effectiveness of the local economy.

All of the so-called “developing” and “successful” settlements are without exception located very close to larger centres, or at least in the sphere of influence of such a centre. At the same time however mere proximity to a larger centre does not, of itself, guarantee such status. (Oru: 0.13, Sompä: 0.12). This leads to the hypothesis that *advantageous location is a necessary but not a sufficient condition for guaranteeing the development and success of a settlement*. Analysing more closely the situation in successful settlements, we can see that all of them have some other advantage in their environmental make-up in addition to their advantageous location.

Three or four of the successful settlements (Taebäla, Sindi, Kehra, and to some extent Loksa) function as suburban areas for larger or even regional centres. This fact alone however was not enough to see them avoid the basic problems of structural change (see for example Sindi in the period 1993-1996), though they have been capable of solving such problems and of developing entrepreneurship as a factor in the local economy. To this extent we can now see the emergence of certain synergies in the form of supporting activities attracting new investors in Sindi (Ernits *et al*, 1998a). In Taebäla the former mono-enterprise took part in a relatively “know-how” intensive branch of activity, undertaking technical services for agricultural enterprises. Aravete is actually a poly-functional settlement, being also the centre for the agricultural activity that surrounds the settlement. In Palivere two new enterprises have been formed on the basis of the former dominant enterprise bringing about a more multi-faceted economic structure. In Loksa entrepreneurship thrives, while even in Kunda, whose location remains rather disadvantageous in comparison with the others, relative success has come via the investment of international capital.

It should also be noted that the four Estonian mono-functional settlements (Kunda, Kehra, Sindi and Järvakandi) that have received foreign capital investment all have small distance factors. This leads to the hypothesis that closeness to the centre is for

foreign direct investment a significant factor in their choice of location. The theoretical framework of FDI-s also supports this opinion. As one of the most important factors in the choice of location was transportation costs, smaller settlements near to core regions have benefited from the synergy created in these core regions: synergies caused by the concentration of customers and production factors. For international capital the existence of an effective system of local networking is also very important (Morsink, 1998). These theories, it should be noted, are however actually more appropriate on a larger scale, where time/distances become even more important (see also part 4).

The distance factors of settlements with “crisis-assumptions” are mostly equal to the average level of Estonian mono-functional settlements, but noticeable here are the numerous representations of settlements located close to the larger centres in this group (Turba, Sompa, Puhja). Here concerns have been raised as regards the “proletarian” nature of these settlements, existing as they do without the aid of the farming economy as an alternative source of living for their inhabitants. We also have rather typical urban conglomerates of factory-workers in this group (for example Aseri, Sompa, Tootsi), and although they often have an advantageous location and perfect public transport connections with the major centre, an entrepreneurial milieu has nevertheless failed to materialise. Such settlements are often characterised by low levels of “know-how” and by poor qualification levels among the workers.

The smaller than average distance factors for settlements that underwent the crisis in 1996-97 is a rather stochastic exception, and is simply explained by the small number of observed settlements. Koeru has not actually experienced a crisis, but Võhma and Oru are typical proletarian settlements. This is proof again that proximity to the larger centres and good public transport connections do not in themselves compensate for the advent of a crisis in the settlement in question caused, for instance, by the bankruptcy of the dominant enterprise.

The limits of the research

On the basis of this information we can now set out some conclusions as regards the situation, conditions and perspectives of Estonian mono-functional settlements, though of course we should remain sceptical of conclusions concerning single groups of settlements given the small number of settlements in each particular group. In addition, comparison with the other problematic industrial districts and industrial enterprises requires additional information.

In calculating distance factors we used the shortest route available, but in addition to geographical distance we also took into consideration the quality of roads and railways, the situation as regards public transport, and the extent of actual social connections between the settlement and the centre. The single case where the public transport was considered to be insufficient, and estimated by local government to be a critical problem was that of Lathes, which has a relatively small distance factor.

We must also point out that the distances between settlements and their centres are relatively small between all Estonian settlements. As such, explanations connected to distance appear rather weak. The maximum distance from the Estonian capital Tallinn to the most peripheral settlement in the country is circa 300 kilometres, while that from the various county centres to Tallinn is never more than 70 km. Thus the role of

location as regards peripheral districts and settlements may be rather different in the larger or more sparsely populated countries.

Conclusions

The main reason for the problems in Estonian mono-functional settlements is their inability to adapt to the changing circumstances caused by the structural transformation of the economy. An important role is played here by inflexible production systems based on inflexible hierarchies, as these cannot be utilised to create adequate linkages, synergetic effects or the advantageous entrepreneurial milieu that is so important to success in the new global economy. The location of industrial plant in some larger centre offers a more advantageous environment, possibilities for linkage and networking supported by research, public agencies and NGOs as well as offering a larger local market and the possibility of interactive connections. In such conditions synergetic effects occur much more easily, as internal competition functions as a stimulant to development. Nevertheless, proximity alone does not guarantee success where such a socio-economic environment is absent, nor does it stem or offset the occurrence of crises in the dominant enterprise.

Advantageous location is thus a necessary but not a sufficient condition for successful development. All Estonian successful mono-functional settlements have, in addition to the positive location factor, some other advantage, be it “know-how” in the dominant mode of production, the existence of alternative activities, or the significant investment of international capital. However, the latter depends rather significantly on location, and even more on the socio-economic *milieu* of the settlement itself.

The districts identified as suffering from disadvantageous preconditions for successful development can be divided into two groups:

- Those districts with a significant farming economy base providing an alternative activity in their own peripheral districts. Such districts are generally stable but stagnant, with neither crisis nor significant development occurring.
- The settlements of a “proletarian” character, usually located advantageous locations, but unable to realise such advantages due to the disadvantageous socio-economic *milieu* prevalent in the settlement.

We can therefore summarise by noting that the main determinant reason for success and development in the settlements studied relates to the condition of the social and economical environment, though as a significant caveat to this we should note that the richest environment favouring the development and entrepreneurial activity develops more easily into settlements located near to the larger centres. Peripheral districts as such are not advantageous places for the evolution of a socio-economic milieu favouring the development of such skills, attitudes and activities.

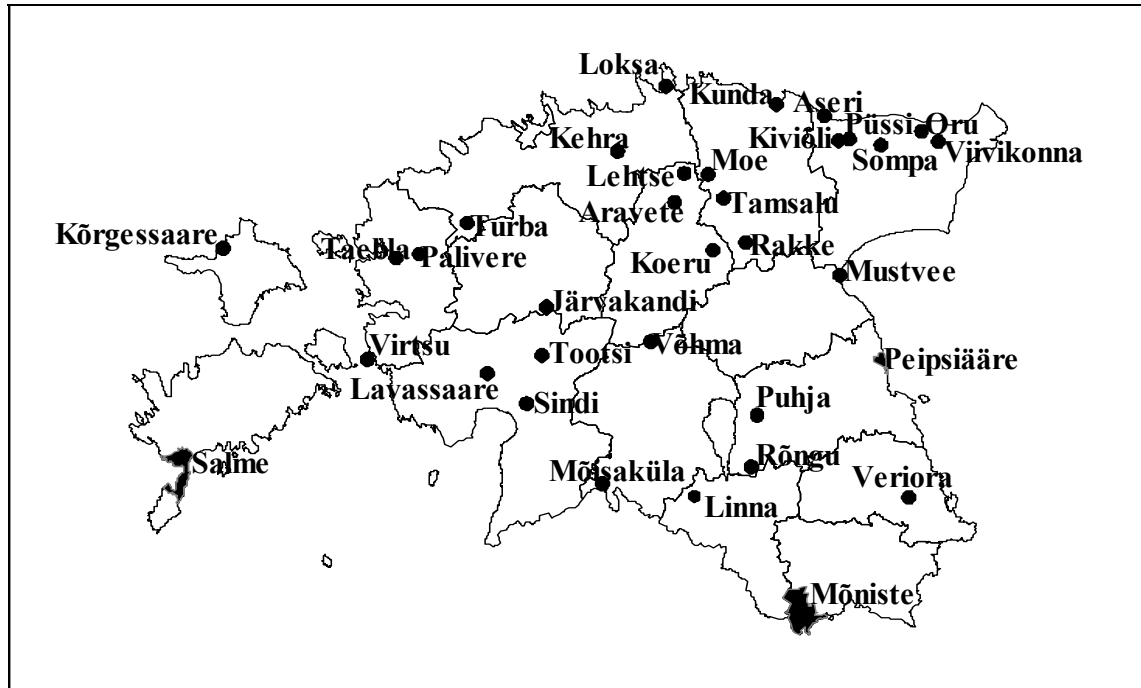


Figure 1. The mono-functional settlements in Estonia 1997.

Notes

¹ The Estonian Ministry of Interior undertook a research project concerning the possibilities of mitigating such crises, as well as avoiding future crises (Ernits *et al*, 1998), the results of which are used in this paper.

² This programme made an exhaustive study of the profile of Estonian mono-functional settlements (see *MFA profiliuuring*, 1997), the results of which are also used in this paper.

³ Estimations are collected with questioning of the officials of local government made by the program of Estonian mono-functional settlements. Source: (*MFA profiliuuring*, 1997).

⁴ Source: *ESA*, 1997. The rest data in the table are the calculations of the author.

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