

# **ENVIRONMENTAL INNOVATION THROUGH TRANSPORT POLICY: THE IMPLEMENTATION OF A FREE FARE POLICY ON PUBLIC TRANSPORT IN TALLINN, ESTONIA**

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## **SUMMARY**

Urban areas are of increasing relevance when it comes to sustainability.

- First, about half of the world's population now lives in cities (increasing to 60% by 2030).
- Second, cities are nowadays responsible for levels of resource consumption and waste generation that are higher beyond their share on world population.
- Third, cities are more vulnerable to disruptive events that can lead to restrictions on the provision of resources and to changes on the environment caused by climate change.
- And fourth, because they concentrate key resources (political, social, cultural...), cities are seen as strategic scenarios where to experiment and develop solutions to cope with the prevailing sustainability challenges driven by the major social and environmental transformations.

Urban agglomerations can be seen as complex innovation systems where human activities are shaped in order to transform societies towards sustainable development. For this paper, we focus on the case of an environmental innovation regarding transport policy, the implementation of the fare-free policy on public transport for all inhabitants of Tallinn, Estonia.

Tallinn, with 414,000 inhabitants in 2015, is the capital of Estonia and the largest city in the country. Over the last two decades the share of public transport trips decreased dramatically. After a public opinion poll in 2012, in which over 75% of the participants voted for a fare-free public transportation system (FFPTS) in Tallinn, the new policy was implemented on 1st January 2013. From that date on inhabitants of Tallinn could use all public transport services (busses, trams, trolley-busses) operated by city-run operators for free. Later the fare-free system was implemented also on trains within Tallinn. In this paper we analyze the context, in which this policy was implemented, the main characteristics of its implementation and its actual situation.

## **1. INTRODUCTION**

### **1.1 The opportunity of the Fare-free Public Transport initiative**

The attractiveness of public transport (PT) is due to its potential contribution to environmentally friendly, convenient and safe handling for present and future traffic demand. The primary goals of PT are to provide a wide-spread attractive offer by using available budget funds as effective as possible.

The following conditions should be fulfilled in order to accomplish the function of PT in terms of customer service, ecology and economy as well as road safety:

- That those who are dependent on PT are supplied according to modern standards (customer benefits);
- That as many people as possible choose such PT voluntarily; that the PT offer is so attractive that people make use of it, rather than using private car (customer benefits and social benefits, the latter especially in terms of traffic safety and ecology);
- That the system, besides to be perceived attractive by users, is working cost efficient.

PT has theoretically several advantages, all of which are closely related to sustainable mobility and / or road safety:

- Preventing isolation of those who have no access to a private car (especially in sparsely populated areas).
- Limitation of motorized traffic: Not all paths have to be covered by private car; with a good PT system several routes which are done normally by car can be replaced by using PT.
- Independence and quality of life: not to be dependent on other people will or availability. This aspect is especially relevant for people who do not have access to private means of transport (including children and the elderly)
- PT has the potential to improve road safety: This is the result of traffic pacification and reducing risk behaviours (e.g. not driving under the influence of alcohol).

### **1.2 Other examples of Fare-free Policy**

Since the late 90s a few European cities introduced FFPTS as for instance:

- Hasselt (c.a. 75,000 inhabitants), Belgium, in 1996;
- Templin (15,000), Germany, in 1997;
- Aubagne and nearby municipalities (100,000 in total), France, in 2009.

The introduction of FFPTS lead to a dramatic increase in ridership. E.g. in Hasselt (fare-free for everybody) the ridership increased tenfold with 37% of the new trips attributed to new users. This was also due to the fact that additionally changes were introduced e.g. by increasing the network.

In a report by Cats et al. (2012) for the City of Tallinn it is stated that in Aubagne, the introduction of fare-free policy was motivated by the fact that user fares accounted for only

9% of the public transport system budget. Nevertheless no systematic analysis was carried out, but there are indications that ridership doubled and more resources were allocated to increase system capacity.

In Templin, the vast majority of this increase reported to be among children and youth but was followed by the problem that vandalism was reported more often.

Nevertheless in all the three above mentioned cities, only a relatively small (10-20%) substitution effect was caused by a modal shift from private car to PT (Storchmann, 2003: Van Goeverden et al., 2006.). In Hasselt the substitution effects of trips switching from private car to PT was only 16% of the total trips.

## **2. METHODOLOGY**

This paper is partly an outcome of the project entitled '*Fare-Free Public Transportation System in Tallinn - Revealed Pros and Cons.*' And is therefore an outcome of COST Action IS1309 'Innovations in Climate Governance: Sources, Patterns and Effects' (INOGOV). For the project ten semi-structured qualitative interviews to key informants were performed. The face-to-face interviews took place in Tallinn in December 2015. The key informants belonged to the local and national authorities and academics. In particular they belonged to the following institutions: Stockholm Environment Institute; Climate and Radiation Department, Ministry of Environment; Tallinn University; Geomedia Consulting and Training Centre; Transport Development and Investments Department, Ministry of Economic Affairs; Tallinn Transport Department; Tallinn Technical University & Stratum Inc.; Tallinn City Government; Harju Public Transport Centre. Next to the field work the paper is complemented with secondary data gathering and analysis.

## **3. RESULTS**

### **3.1 Tallinn as the context for the implementation of the FFPTS**

During the last two decades since Estonia restored its independence the share of PT trips decreased dramatically by more than 30%. In Cats et al. (2014) it is stated that the current modal split is still favourable towards PT with a market share of 40% (but decreased from over 70%) followed by walking (30%) and private car (26%) use. But within the same period, the motorization rate has more than doubled up to 425 cars per 1,000 residents in 2012. Before the FFPTS was introduced in Tallinn, the farebox recovery rate – the proportion of PT operational costs that was covered through ticket sales – was 33%. Single tickets cost one Euro and a monthly card cost 20 Euros. Therefore the cost of a monthly card corresponds to approximately 2.5% of the average monthly disposable income after tax.

Furthermore Cats et al. (2014; 2012) reported that the additional subsidy amounts to an annual cost of 12 million Euros. Additionally it has to be said that in 2003 the PT fares were already reduced by 40% for people who were registered as inhabitants of Tallinn and that

approximately 36% of the passengers were already exempted from paying PT fare based on their socioeconomic or occupational profiles. Also 24% of the passengers benefited from special discounts (pupils etc.). Cats et al. (2014) further stated that the fares for the PT were identified as a primary problem area in Tallinn. On an annual municipal PT satisfaction survey from 2010, 49% of the respondents were most unsatisfied with PT fares followed by crowding (29%) and frequency (21%).

### 3.2 The implementation of the FFPTS in Tallinn

The PT system in Tallinn, the capital of Estonia, is organised by a transport organisation belonging to the city. The City of Tallinn is providing a free PT system from January 1, 2013 on for all inhabitants registered in Tallinn on all PT services which are operated by city-run operators. This makes Tallinn with approximately 415,000 residents the largest city in the world that offers FFPTS for all of its inhabitants.

Currently, according to Tallinna Transpordiamet (Tallinn transport department), there are 73 bus lines, four tram lines and five trolleybus lines operating in the city to ensure that users can move around the city. At peak hours on work days, the lines were serviced by 299 buses, 56 trams and 82 trolleybuses, amounting to a total of 437 PT vehicles. See figure 1 for an overview of the PT network.

(Around here Figure 1)

#### Figure 1 – Tallinn Transport schematic route map

Source: <http://www.visittallinn.ee/>

However, the implementation of the FFPTS came together with other initiatives such as the Public transport priority system and Automatic stop calls and information signs in vehicle. According to the CIVITAS SMILE project the goals where:

*The general goal of the measures is to interrupt the decline in the use of collective passenger transport services in Tallinn. It will also prevent further decrease through increasing efficiency and speed and improving the image of collective passenger transport.*

*The indirect goal is to decrease car traffic and congestion in the city centre and to reduce use of fossil fuels and emissions. (CIVITAS SMILE project, pp. 1)*

The following objectives are declared:

- Objective 1 - Reduce congestion in the city centre and improve air quality;
- Objective 2 - Reduce journey times;
- Objective 3 - Reduce scheduled journey times;
- Objective 4 - Increase the number of PT users;
- Objective 5 - Increase the level of satisfaction with the information provided to PT users from 35% to 60%;
- Objective 6 - Increase the reliability of PT;
- Objective 7 - Improve the attractiveness of PT system through improved passenger information (electronic displays and equipment for automatic stop-calls) in at least 384

vehicles in the PT fleet;

- Objective 8 - Increase the number of disabled people using PT by 100%;
- Objective 9 - Give additional information about routes to drivers based on GPS.

It is clear from the interviewees' perspective that the idea of the FFPTS in Tallinn had been for some time in the Estonian political arena proposed by social-democrats for another city in Estonia (Tartu) and by the former Major of Tallinn, Hardo Aasmäe. However it had not been formally considered by Tallinn transport authorities until the actual Major of Tallinn, Edgar Savisaar, put it on Tallinn's political agenda. The specificities of Estonian political alliances and population distribution are crucial to understand not only the political opportunity of this proposal, but also the support and resistance it encounter. Briefly, the Central Party that runs Tallinn, where about one third of Estonian population lives, is in the opposition at the national level.

FFPTS in Tallinn did not come so much as a publicly discussed and integrated environmental innovation regarding transport policy but as one of several measures implemented to increase the quality of PT in Tallinn and to revert the tendency of decreasing number of passengers. The interviewees rather highlight the link between this specific measure and the local elections one and a half years ahead of when this proposal was re-launched by Savisaar. In fact one of the criticisms is the lack of a coordinate plan, or, in the words of the interviews "not such a thing as a plan exists". The environmental side of public transport dimension has been exploited afterwards as city council has got interested in gaining the competition for the European Green Capital Award in 2018.

A popular referendum or poll, with a participation rate 20%, was held in 2012 resulting in 75% of the voters declaring to be in favour of introducing the FFPTS in Tallinn. After the referendum, the city council approved the measure (Aas, 2013).

Besides the fare-free system also other measures were introduced in order to make the use of PT more attractive. In the project description the following additional measures are described:

- PT lanes;
- Signalling system, for example, priority signals for PT through,
- Installation of traffic control equipment on 24 intersections, together with stopping directly before the signals;
- Adjusted traffic control, for example new one-way streets with two-way traffic for PT, removal of car traffic from tram tracks, double stopping lines; and
- Automatic passenger counting in a number of vehicles, in order to obtain information about passenger flow and to optimise the timetables.

### **3.3 Actual situation of the FFPTS in Tallinn**

The main controversy refers to the evaluation of the success this FFPTS policy. Evidence regarding the FFPTS implementation success is inconclusive due to a lack of accurate measurements of PT passengers and car users both before (when validation was not compulsory) and after (when validation is done only by 1/3 of travellers). This picture, due

to the lack of accurate measurements, gets even more blurred as during the aftermath of its implementation the city has undergone important infrastructure reform (the variability registered in street crossings might be due to city access and street works and also to tram railway renewal), there is no specific available data on private vehicles petrol consumption, and according to experts even air quality is more dependent on climatic conditions than on traffic.

The controversy also affects the (dis-)connectivity of this policy with other measures also affecting mobility in Tallinn, such as the development of the bus priority lines, the acquisition of new vehicles (trams and buses), the renovation of the tram railway, the Park & Ride facilities in the peripheries of the city, the new transport card (*ühiskart*), and the inconsistencies of other policies such as the parking policy in the city (regarding prices, zones, private parking, city centre residents parking facilities or the requisite of new parking in new developments) or the slow PT connectivity between peripheries in the city. Therefore the idea that the original purpose of this proposal was not related to the promotion of green or sustainable mobility in the city is also rooted on the lack of more challenging policies regarding the promotion of intermodal PT, especially with sub-urban areas, and the real transfer of users from private car use to PT. To the point that one interviewee said “there is no public strategy on the transport policy in Tallinn”.

One unexpected result has been the increase on the city budget that accompanied the implementation of the FFPTS in Tallinn, the cost of which (about 16 million €) has been self-financed thanks to new taxes collected due to the increase of residents registered in the city. Most interviewees agree that the majority of those new registered residents (about 16.000 new residents) were actually (none-registered) residents in the city of Tallinn before the FFPTS was implemented, and that they have officially changed their official living place to benefit from this new free transport policy. Also, an extended criticism to this policy is that it only provides free service to Tallinn residents and therefore has not challenged the problems derived from suburbanization as it does not cover neighbouring villages, with counted new exceptions such as the municipality of Viimsi.

The relatively very high increase in train passengers, once this FFPTS was made to include within-city train rides, for Tallinn residents as well, and integrate it with the rest of the city transport system, has been another very positive and unexpected consequence of this new policy. The increase of about 1,000% in train rides within Tallinn borders still modestly accounts for about 3% of the total PT rides in Tallinn.

### **3. CONCLUSIONS**

As we have seen in this paper, the implementation of the FFPTS in the city of Tallinn attracts international attention for being the biggest attempt in Europe to develop a fare-free policy regarding public transport. However, a closer look to the actual implementation and performance of the initiative brings up arguments for and against. Within the arguments against this FFPTS policy interviewees claimed that this new policy had to do more with a “populist” move to assure re-election; that it has not achieved a significant increase in PT use (only of about 2-3%) and when this has happened is through the substitution of

pedestrians but not of motorized vehicle drivers; that it has been done on the cost of quality improvement and might be unsustainable to keep in the near future if oil prices rise again. On the other hand, at the positive side, it is claimed that this policy has reverted the decreasing use of PT, tendency that has been previously identified, and that has achieved a respectable increase in PT use (of about 10%), specially favouring lower income families and promoting economic activity in the city. They also maintain that it has really increased PT use within Talliners although this increase might be compensated with more cars entering the city from other municipalities. Again, the competition for the European Green Capital Award-2018 target, that is projecting Tallinn at the international scene as much as the digital society has projected Estonia in the recent years, will keep the FFPTS in Tallinn on the political spotlight at least for next two years.

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