

FULL FREE FARE PUBLIC TRANSPORT: OBJECTIVES AND ALTERNATIVES

SEPTEMBER | 2020

INTRODUCTION

At a time when cities must prepare for and face serious environmental and societal challenges, sustainable urban mobility has never been this high up on the agenda. With the transversal role that public transport plays in terms of urban quality of life, increasing and facilitating its access is a major challenge. Following this line of thought, the concept of free fare public transport (FFPT) has been gaining traction in the public discourse, as several large cities have been considering this possibility.

While free public transport is often brought up in political discussions, its implementation has very concrete implications on the organisation of public transport. Yet, the strengthening of public transport

services and infrastructure must remain the overarching principle throughout these discussions. It is therefore crucial to carefully consider the stated objectives which this measure is meant to achieve as well as its impacts, in order to decide whether or not it is the most appropriate use of public funds. In doing so, one must keep in mind that free public transport as such does not exist, as transport service and infrastructure has to be funded one way or another. Hence the reference to free fare public transport means that public transport users do not contribute to funding the service directly through the payment of a fare.

Drawing from the experience of FFPT cities, this Policy Brief provides an analysis of the various stated objectives and the extent to which FFPT is the right tool to achieve them. Finally, it offers recommendations for public transport authorities (PTAs) and decision makers who are contemplating full FFPT as an option for their cities.



DISTINCTION BETWEEN FULL FREE FARE AND PARTIAL FREE FARE SCHEMES

Free fare public transport can take several forms. This paper will focus only on full FFPT. Whereby a free fare network is characterised by the absence of tickets or distribution of zero-fare tickets¹.

• 1. Kębtowski, 2019 Wojciech, *Why (not) abolish fares? Exploring the global geography of fare-free public transport*. Springer Nature.

A range of nuances can be identified within this concept, so we will assume that **full free fare public transport** is present if:

- It is applicable to most parts of the network
- It benefits most users
- It encompasses most of the time that the system is running
- It has lasted for longer than 12 months

This definition differs from **partial free fare public transport** which includes limitations in its application. It is important to acknowledge that more specific types of partial free fares are more widely used than full FFPT, as for example:



Temporary

Limited duration such as trial period, 'crisis' situation or particular event



Temporally-limited

Specific periods of time



Spatially

Specific parts of the network



Socially

Specific users

In terms of development, full FFPT has grown from the very first case which emerged in the US in the 1970s, to 96 cases spread across all five continents in 2017. Despite its newsworthy dimension, only a limited number of public transport networks worldwide have implemented FFPT. It is also worth noting that not all FFPT experiments were successful, and indeed many schemes have been discontinued over the years².

The evolution of full FFPT cases worldwide (1970-2017)³

YEAR	FULL FFPT CASES					
	Total	Europe	North America	South America	Australia	Asia
1970	1	-	1	-	-	-
1980	6	2	4	-	-	-
1990	12	4	8	-	-	-
2000	25	7	16	2	-	-
2010	56	27	24	5	-	1
2017	96	56	26	11	1	2

One trend that can be observed is that full FFPT is growing in the US, Poland and France. Although the characteristics and features of each city and country differ, cities which are implementing full FFPT tend to be small

or mid-sized. Tallinn, Estonia, is currently the largest on-going FFPT scheme within the 12 month threshold. As of 1 March 2020, Luxembourg has introduced FFPT on a national scale making all buses, trams and trains fare-free for inhabitants and visitors alike⁴.

IN RESPONSE TO COVID-19

In response to the Covid-19 global pandemic, the cities of Toulouse and Grenoble have adapted their transport offer to protect both staff and passengers, while ensuring the continuity of the service. These extraordinary measures include the temporary implementation of FFPT on the network in order to limit contact and cash handling between staff and passengers. Similar measures have been observed in other cities during the confinement period.

FUNDING PUBLIC TRANSPORT AND THE COST OF MOBILITY

Public transport operation is funded through three main channels:



Fares



Tax payer and government subsidies



Third-party funding

The ratio and/or importance of each funding source varies depending on the local context, but stability and security can be found in the diversity of its funding sources. In 99% of networks, fares cover a substantial part of the operational costs. In large European cities, the coverage rate has been reported to grow up to 50%, where for instance, the cost coverage in Germany from fares grew from 43% in 2008 to 53% in 2018. However, small and medium-sized cities tend to rely to a lesser extent on fare revenue than large cities, the loss of which can be recovered more easily from other sources. For instance, only 9.2% of the operational costs were covered by fare revenue in the French city of Dunkirk⁵, and countries like Luxembourg or Estonia also had low coverage rates, complemented with subsidies.

Public transport is not free to organise, operate and improve. If fare revenues are removed then the other two funding sources will have to increase. This means increasing taxes and/or developing additional commercial revenues to compensate, such as renting space in stations. Implementing FFPT has a very concrete impact on the financial model of public transport.

In addition to operational costs, public transport networks require major investments dedicated to further develop-

• 2. Austin TX (USA), Bologna (IT), Bar-le-Duc (FR), Chelan-Douglas Counties WA (USA), Colomiers (FR), Denver CO (US), Dnipropetrovsk (UA), Hasselt (BE), Hawaii County HI (US), Kristinehamn (SE), Lübben (DE), Mercer County NJ (US), Monterey Park CA (US), Rome (IT), Templin (DE). • 3. Kęłowski, 2017. *More than just riding without a ticket? Exploring the geography of fare-free public transport*. • 4. Mobilité Gratuite au Luxembourg, www.mobilitegratuite.lu/, accessed 10 March, 2020 • 5. Huré, 2018. *Pourquoi la gratuité des transports collectifs gagne-t-elle du terrain?* Forum Vies Mobiles.

ing their services, in most part supported by the public sector. Increasing the share of government subsidies to compensate for the loss of fare revenue might have the effect of crowding out available funds for the development of the network⁶. Hence, making public transport less attractive for private investors.

While the balance between each funding source can be adjusted to fit the local context, the numerous positive externalities brought by public transport makes a compelling argument in maintaining a certain level of support from society through taxes.

LUXEMBOURG

Population 614 000

FFPT status: Implemented March 1st, 2020

The nation of Luxembourg has introduced FFPT, making all buses, trams and trains fare-free for inhabitants and visitors alike. In Luxembourg, fare revenue accounted for around 8% of the total operating costs, the loss of which will be compensated through taxes. The scheme is being implemented with the aim of increasing the purchasing power of low-income users. In order to meet the foreseen increased demand, the tram line will be extended, and the bus network will be fully reorganised within a year. The implementation of the Luxembourg FFPT scheme is deemed too recent to be analysed in depth.



From the users' perspective, car owners have already made the choice in using a much more expensive transport mode. In France for example, the annual cost of owning a car is indeed considered to be 16 times the price of a public transport annual ticket⁷. With this figure in mind, we can easily understand why FFPT alone will not be sufficient to attract private car users, as opposed to pedestrians and cyclists. This means that complementary strategies must be put in place, in terms of the public transport offer, but also through car restrictive measures such as parking. Finally,

when it comes to commuters, there needs to be coherence on a regional level, for instance free access to the last leg of the journey will probably not be a sufficient financial incentive in shifting their travel mode.

MAIN OBJECTIVES BEHIND FFPT INITIATIVES

In the development of the FFPT debate, many reasons and arguments have been used as cornerstones for the introduction of such schemes. The three main objectives aim to encourage a modal shift from private cars to public transport, improve social inclusion, and enhance the urban and economic development of cities.

DOES FFPT SHIFT MODAL SHARE TOWARDS PUBLIC TRANSPORT?

The main challenge, when addressing modal shift, is to influence behaviours towards sustainable mode choices. Passenger surveys reveal that user preferences are more impacted by the quality of the public transport service than its price⁸. Indeed several studies have shown that, even though value for money is often a source of discontent⁹, the price of public transport comes well after reliability, punctuality, frequency, comfort, security and geographical coverage, in terms of priority criteria¹⁰. Public transport users behaviours are also influenced by an emotional component rather than purely rational thinking.

In order to achieve a modal shift, it is therefore crucial to focus on and invest in the quality of public transport services. It should also be combined with restrictive push measures designed to nudge car drivers towards more sustainable and affordable mobility options, as cities like Lyon have done successfully. In this context, temporary FFPT can best be used as an incentive to enhance customer loyalty, encourage new potential passengers to discover the network, and facilitate mobility at specific points in time, such as during specific events or pollution peaks.

This leads us to question the extent which FFPT can effectively achieve a modal shift towards public transport. In other words, is free fare a sufficient lever to achieve this shift?

Impact of FFPT on public transport ridership

Initially, several FFPT schemes were implemented with the intention of increasing the ridership of underused public transport systems in small or medium-sized cities, where the initial public transport supply and share was very low and private cars seen as the main trans-

• 6. Some cities in Latin America discontinued their FFPT schemes as the quality of the service declined. • 7. UTP, 2019. Note économique. *La gratuité totale: une menace pour le transport public et une réponse inadéquate aux objectifs de développement durable affichés*. • 8. UITP, 2013. Policy Brief, *Better Public Transport Fare Policy For More Resilient Funding*. • 9. Fearnley, 2013. *Free Fares Policies : Impact on Public Transport Mode Share and Other Transport Policy Goals*. International Journal of Transportation. • 10. European Passenger Federation, 2018. *Free public passenger transport: an appealing but useless idea with underestimated perverse effects*. • 11. Dricot et al., 2019. *Gratuité(s) des transports publics pour les usagers : une étude du GART pour objectiver le débat. Rapport d'analyse*.

port mode. As a result, these networks benefited from a noticeable increase in ridership, mainly in the first year of the implementation of the scheme and later followed by a period of stagnation. For that reason, in the most successful examples, cities have had to increase the supply and frequency of public transport but no significant impact on the car modal share was reported¹¹. In Tallinn, for instance, an estimated 3% shift from cars to public transport was achieved during the first year of FFPT¹².



FRÝDEK-MÍSTEK, CZECH REPUBLIC

Population 57 000 (2020)

FFPT status: Ongoing since March 2011

Recognising the environmental and safety issues linked to the important traffic on the major regional roads crossing the Frýdek-Místek city centre, as well as the increase in individual car use and declining public transport use. The municipality set out to encourage a modal shift from private cars, reduce congestion, increase public transport ridership and create an incentive to eliminate citizens' potential debts to the city, such as parking tickets - a condition to get the free public transport pass.

The FFPT scheme was introduced in March 2011 and was gradually extended, reaching a total of 19 municipalities, and is available for all residents of these municipalities. Free access to the public transport network is subject to the purchase of an annual coupon for 1 Kč (0.04€), which is carried on a personal smart card. The implementation of the FFPT scheme was combined with an increase in the fleet capacity, from 24 buses to 46.

The first year saw an increase of 22% of passengers compared with 2010, with an average of 13.5% additional passengers per year in the following years. The increased availability of unused parking spaces in the city centre during working days and off-peak hours was seen as evidence that car use was reduced during the same period.

HASSELT, BELGIUM

Population 73 000 (2010)

FFPT status: Implemented in 1997, discontinued in 2014

Full FFPT was first considered as a means to alleviate congestion around the city centre, instead of a planned construction of a new ring road. At the time, the bus network which included eight buses and four lines, was largely underused. The regional operator of the Flanders Region, De Lijn, agreed with the municipality of Hasselt to ensure a specific zone to be FFPT. This scheme was in part funded by the Flanders Region. The scheme was introduced along with an extension of the bus offer, from three to nine bus lines as well as an increased frequency. Restrictive car measures were also introduced in parallel: traffic capacity restrictions and reduction of parking spaces.

In this case, FFPT was used as a trigger to encourage Hasselt inhabitants to discover and take ownership of the new mobility offer within the city. As a result, bus ridership increased by 700% when the FFPT scheme was first introduced, from 1,000 to 7,000 passengers per day. In terms of modal shift, 63% of newly-generated trips were made by former bus users, 16% by car users, 12% by cyclists and 9% by pedestrians. Overall, the number of passengers per year increased from 331,551 in 1997 to 4,886,858.

One year after discontinuing the FFPT scheme, the operator observed that it had retained 75% of former travellers on weekdays, and 67% on the weekend, indicating that the use of public transport had indeed become engrained in mobility behaviour. It is worth noting that the occupancy rates have mainly dropped on short-distance routes, on which the FFPT scheme had attracted pedestrians.



¹² Cats et al., 2017. *The prospects of fare-free public transport: evidence from Tallinn*.

Most FFPT examples were coupled with an increase of quality and frequency of the services, provided through additional investments in the current fleet and the establishment of new lines or expansion projects. Unfortunately, it is impossible to determine to what extent FFPT is responsible for the observed increase in public transport ridership, as opposed to the network improvements.

Finally, FFPT changes the nature of the relationship between public transport operators and their customers, taking away from operators the use of pricing as a lever to deal with peak hours and as a marketing tool.

Impact of FFPT on environmental and urban issues

In large cities, public transport networks are usually widely used and even often saturated. Their arguments in favour of FFPT rely more on environmental and quality of life concerns, with the objective of shifting people from private cars to public transport. A modal shift from private cars towards public transport would indeed have a positive impact on local air quality, road safety and noise pollution to name a few¹³.

While a positive trend has been observed in public transport ridership in FFPT cities, the reported impact on private car use tends to be quite limited. This suggests that FFPT schemes attract people who would normally use active modes such as walking and cycling, and induce additional trips from existing public transport users. A study on the feasibility of FFPT in the Ile-de-France region concluded that by shifting to public transport, 90% of car users would increase the duration of their trips whereas most trips done by pedestrians or cyclists could be shortened by such a shift¹⁴. In Hasselt, new trips were induced by FFPT, of which the vast majority were made by former bus users and to a lesser extent from other mode users¹⁵.

This ridership growth increases pressure on the public transport networks, without providing the foreseen benefits of alleviating congestion or pollutant and GHG emissions. In turn, the increased demand for public transport prompts the need for additional capacity in order to avoid a deterioration of service quality, and entailing additional costs. The issue of capacity (and its funding) must therefore be taken into account at the inception stages of an FFPT scheme.

LYON, FRANCE

Population 1.7 million (2020)

FFPT status: studied at the request of the Organising Authority, but rejected

For the past 20 years, Lyon has followed a virtuous

cycle approach of funding and cost management on its TCL network. Between 2001-2018, ridership in Lyon has grown steadily up to a 58% increase from 303 million to 480 million passengers per year. During the same period, the network's offer increased by 42%, with the SYTRAL investing €3.6 billion. Ticket prices have followed the evolution of operating costs, increasing by 1.7% in 2017. Nevertheless, 98% of subscribed passengers pay less than €1/day, thanks to social tariffications based on the age and income level of passengers.

The study conducted by Laboratoire Aménagement Economie Transport (LAET) concluded that while the implementation of FFPT in the TCL network could expect a ridership increase of 15-30%, the majority of new trips would stem from cyclists and pedestrians rather than car users.

Passengers currently take an average of 330 trips per inhabitant per year, a significant contrast with the average 30 trips per year per inhabitant in the medium-sized cities which have implemented FFPT schemes.



Impact of FFPT on seamless mobility

Apart from the monetary incentive, FFPT schemes have reported the removal of ticketing as a benefit, thus facilitating accessibility to public transport. This contributes not only to the promotion of a modal shift, but also to the social inclusion goals of a city.

However, ticketing and its underpinning technology has significantly evolved in recent years. There now exists a variety of formats and payment methods, as well as a trend towards the integration of public transport ticketing on multimodal platforms. In many networks, it is indeed possible to purchase tickets via several channels, from the traditional counter-top and ticketing machines to SMS tickets, online or via mobile applications, smart cards and credit-card “pay as you go” schemes. This wide range of possibilities suggests

• 13. UITP, 2020. *Promoting safe and sustainable cities with public transport for the SDGs*. • 14. IDFM, 2018. *Rapport du Comité sur la faisabilité de la gratuité des transports en commun en Ile-de-France, leur financement et la politique de tarification*. • 15. Fearnley, 2013. *Free Fares Policies*.

that many public transport networks are already well on their way to making seamless mobility a reality.

It is also often believed that removing the requirements linked to ticket sales and control would lead to substantial savings. In the case of Lyon, the estimated savings from ticket distribution and control would represent only 5% of the operational costs¹⁶. What's more, ticket control can serve the purpose of demand management by collecting data, and security through the presence of ticket inspectors on-board vehicles. It also creates and maintains a link with passengers, fostering a relationship between customers and operators. The projected savings might therefore be offsetted by the implementation of other data collection and security efforts.



DOES FFPT IMPROVE PUBLIC TRANSPORT AFFORDABILITY AND SOCIAL INCLUSION?

Public transport is a fundamental enabler of social inclusion, it facilitates access to jobs, education, recreation, health and other services. Accessibility, on the other hand, is the main factor impacting the mobility of vulnerable groups. A second argument in favour of FFPT is that it would remove all barriers to mobility, consequently improving access to public transport, and therefore social inclusion.

Affordability being one of the public transport sector's embedded priorities, social fares are a key feature of the public service, as most networks provide preferential rates to low-income and identified segments of the population such as the elderly and students. Although FFPT may bring an additional advantage to those user groups, it would ultimately benefit more users who are capable of contributing financially, creating an equity issue¹⁷. Concessionary fares help to better target those who may require support, and more sophisticated approaches like *solidarity pricing* ensure that the purchase power of families is taken into account. Other types of improvements, such as geographical coverage and extended hours of service might be better suited to facilitate the mobility of vulnerable user groups.

TALLINN, ESTONIA

Population 445 000 (2020)

FFPT status: ongoing since January 2013

Before FFPT, ticket revenue covered a third of operational costs and 60% of passengers either already benefited from fare exemptions (children and senior citizens) or reduced fares (students and low-income users). Furthermore, both public transport and pedestrian modal shares were relatively high, with respectively 40% and 30% of trips in the city.

Facing the trend of an increasing motorisation rate, FFPT was introduced for all Tallinn registered residents, with the aims of promoting a modal shift from private cars to public transport and improving the mobility of unemployed and low-income residents. By restricting the scheme to registered residents, the city was able to cover the loss of fare revenue through the registration of 11,000 unregistered inhabitants in 2013.

FFPT was implemented along with car restrictive measures, including a reduction of road-space and a drastic increase in parking fees (from 2€/hour to 6€/hour).

During the first year, the number of trips increased by 14%, especially among low-income and unemployed residents, as well as young and senior age groups. On the contrary, the number of trips by high-income groups decreased. Evidence suggests that the observed increase in public transport usage stems from the combination of implemented measures, and that the figures relate to a generation of new trips rather than a substitution of private car trips.



• 16. Crozet et al., 2019. *Réflexions sur les enjeux de la gratuité pour le réseau TCL*. SYTRAL. • 17. For this reason, New Delhi, India, refrained from implementing an FFPT scheme for women.

GRENOBLE, FRANCE

Population 158 000 (2016)

To ensure the affordability of public transport in the Grenoble urban area, SMTc, the Organising Authority, implemented a solidarity pricing scheme in 2009. In essence, it is based on the idea that users should contribute to the service within their respective means.

As such, annual and monthly fares are defined depending on household income segments, and benefit to all members (parents and children) of the households which qualify. Within this scheme, the price of an annual pass varies from €30-€236.40. Fare revenue accounts for 16% of public transport funding.



CAN FFPT ENHANCE URBAN AND ECONOMIC DEVELOPMENT FOR CITIES?

Public transport quality is a key factor for urban development, and in some cases, FFPT has been put forward as an essential enabler of cities' strategies for urban and economic development. With public transport systematically included in liveability indexes, it is no surprise that FFPT schemes are seen as a way to improve a city's image and make it more attractive.

FFPT then acts as a marketing tool. It provides both international visibility to the cities involved, and a sense of pride to the citizens towards both their government and public transport network, regardless whether FFPT was part of their initial expectations. However, FFPT can only make a city as attractive as the quality of the service. This brings us back to the requirement of investing first and foremost in improving the network and service quality. The urban and economic development of cities is therefore not only owed to the FFPT scheme itself, but to the accompanying measures such as line extensions, fleet renewals and geographical coverage of the network.

Beyond FFPT, regenerating city centres requires a global urban planning approach in favour of active and shared modes. Since FFPT benefits from a noticeable yet short-lived announcement effect, it may be best used as a marketing tool, limited to a certain period of time or specific events, to promote the use of public transport. It should also be implemented in coordination with other mobility measures, such as increasing the public transport offer, supporting active modes and restricting car access and parking.

DUNKIRK, FRANCE

Population 201 332 inhabitants (2019)

FFPT status: Ongoing since September 2018

In 2015, public transport accounted for only 5% of the modal split in the city of Dunkirk. Private car represented the highest share with 67% of the modal mix, followed by walking with 25%. Prior to the implementation of FFPT, a solidarity pricing scheme was applied in Dunkirk. Additionally, for two years prior to the full FFPT scheme, fares were free on weekends. At that time, fare revenue covered 9% of the network's operating expenses.

The implementation of the FFPT scheme was combined with a reorganisation of the network, including the addition of five bus rapid transit lines, and funded by the Dunkirk urban area's own budget.

Between September 2018-August 2019, public transport ridership increased by an estimate of 85%, compared with the previous year.

Dunkirk used the FFPT scheme as a marketing tool in the hope of improving the city's image, and making its city centre more attractive. Although there is no sufficient evidence to fully measure the impact of FFPT alone, ridership to the city centre seems to be increasing.



CONCLUSION

Full FFPT initiatives are discussed in several cities as a potential path in the achievement of environmental, social and economic objectives. The motivations and objectives behind such schemes are diverse in nature, and in most cases driven by political considerations. A serious assessment has to be made prior to the implementation of FFPT schemes, including possible alternatives to FFPT which may be more efficient.

The effectiveness of FFPT to reach these objectives depends largely on the initial local context and the accompanying measures put in place. There is no clear evidence that FFPT alone is enough to bring about modal shift, social inclusion and economic development to a city. Successful FFPT schemes combine a number of push and pull measures, aimed at improving the public transport network and prioritising sustainable transport modes.

Advocates of FFPT often cite increased public transport ridership as the main objective. Increased ridership would normally mean a modal shift from cars, and a reduction in the negative externalities of car use. Yet, public transport is already cheaper than car use and a small further improvement in the price is unlikely to lead to a significant shift. It should not be a surprise that studies suggest a shift instead from other low cost uses such as walking and cycling. From existing users' perspectives, FFPT does not appear to be the main concern as opposed to increased capacity, frequency and overall quality improvements.

Apart from cases where public transport networks were initially underused, the implementation of FFPT requires an increase in capacity. This entails both the need for additional funding and adequate time for the project deployment.

Affordability of public transport is an important objective, linked to social concerns on accessibility and equity. However, FFPT is a blunt instrument to address this. More targeted measures may be both more effective and manageable within the budget limitations faced by many public authorities.

Finally and perhaps most importantly, a full FFPT scheme has a cost that will have to be borne by the government, taxpayers and/or third-party funding in a way that does not place public transport's financial sustainability in jeopardy. The long-term costs and consequences of FFPT must be fully considered and planned for, bearing in mind that reversal is always a difficult political decision.

RECOMMENDATIONS

- The driving objectives behind full free fare public transport should be carefully considered, as there may be more effective ways of achieving potential alternatives.
- Increased public transport ridership and a modal shift in favour of sustainable modes can be delivered with a mix of push and pull measures. In this regard, improvements in the public transport offer and its quality are especially effective.
- Enhanced social inclusion can be better targeted by social fares and an accessible transport network, rather than implementing a full free fare public transport initiative.
- Focusing on service and quality improvement should be considered as a more efficient use of public funding.
- Free fares may be best used as a marketing tool for specific periods of time or specific events to promote the use of public transport, for example pollution peaks or major festivals.

This is an official Policy Brief of UITP, the International Association of Public Transport. UITP has more than 1,800 member companies in 100 countries throughout the world and represents the interests of key players in this sector. Its membership includes transport authorities, operators, both private and public, in all modes of collective passenger transport, and the industry. UITP addresses the economic, technical, organisation and management aspects of passenger transport, as well as the development of policy for mobility and public transport worldwide.

This Policy Brief was prepared by UITP Transport Economic Committee. We would like to thank the participation of all UITP members, along with external guests and experts who shared their insights on this topic. For more information, please contact Hilia Boris Iglesias (hilia.boris-iglesia@uitp.org)

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