

8th INTERNATIONAL CONFERENCE
"TOWARDS A HUMANE CITY"
New Mobility Challenges
Novi Sad 11th and 12th November 2021

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EFFECTIVE MEASURES IN SUSTAINABLE URBAN MOBILITY PLANS (SUMPS): ANALYSIS OF 10 (SUCCESSFUL) EUROPEAN CITIES

Key Words

Effective
measures
SUMP
Modal shift
Road space
transformation

Abstract

The paper presents results of an analysis of measures implemented in various European cities that have been effective in reducing the share of trips by car and increasing the shares of active mobility and public transportation.

Ten cities with a significant modal shift from cars to public transportation and/or active mobility in a period of several years were analysed. For each city, an interview was conducted with a local expert. The questions focused on the reasons for successful changes in travel habits and the existence and relevance of the SUMP in bringing about these changes.

The results show that all cities analysed have some form of SUMP, and many have additional, more specific documents. Also, most cities have been developing these documents and implementing the measures in them for many years. The modal shift has not been the result of a single measure but was always due to the combination of several push and pull measures. Cities implemented restrictive measures for cars as well as improved conditions for alternative modes of mobility and often focused on road space transformation.

1. INTRODUCTION

A Sustainable Urban Mobility Plan (SUMP) is a strategic plan that can be implemented by cities (or municipalities, regions, etc.) with the aim of satisfying the mobility needs of people and businesses for a better quality of life [1]. The SUMP concept is widely supported by European commission, and it was first introduced in 2009 which was followed by the first SUMP guidelines in 2013. SUMP's take into account social, environmental and economic objectives, and mark a departure from the more traditional transport engineering based approaches to developing urban transport systems, which have historically been based on the principle of "predict and provide" and been infrastructure-led [2], [3]. The process of developing a SUMP follows a participatory approach, focusing on people's needs. At the same time, it's effectively tackling the challenges of climate, energy, and environment, caused by transport. Cities with SUMP are achieving different success stories, many of them improving health of the residents – 8 out of 10 healthiest cities have a SUMP [4].

More than 80 municipalities in Slovenia, in which three quarters of the country's population live, have adopted the SUMP, which laid the foundations for Sustainable urban mobility planning at the local level. The analysis of the experience with SUMP's in Slovenia carried out by the Urban Planning Institute of the Republic of Slovenia showed that SUMP's of Slovenian municipalities are at the initial stage of development and their measures have little impact on changing travel habits [5]. The study also showed that no major shift in residents travel habits was achieved with this first generation of SUMP's. Additional information was needed to show that the right selection of measures could not only provide economic benefits to the local communities [6], but also change the residents travel habits visibly in short to mid term time frame. Therefore, a study was started to analyse the European cities, which have achieved major changes in travel habits in a short time. It focused on the key measures that contributed most to the modal shift. The paper presents the key results of this study.

2. METHODS

The analysis included European cities, which have managed to achieve a major change in travel habits with sustainable modes of travel at the expense of car transport in the recent years. We gathered information on cities' modal split from various sources on the internet, mostly from the cities' websites and strategic documents, including SUMP's. The range of the cities researched is diverse, from capitals to smaller European cities (in alphabetical order): Edinburgh, Freiburg, Ghent, Leuven, Lund, Malmö, Pontevedra, Trondheim, Vienna, and Vitoria Gasteiz. The cities involved reduced the share of car use on average from just under 50% to around 35% in a period of several years. It means that on average the cities lowered the share of cars for around 29 %.

Table 1. Table with all the included cities and their collected data.

Cities (alphabetical order)	Car use (before)	Year (before)	Care use (after)	Year (after)	Period before- after	% Of change
Edinburg	54 %	2001	48 %	2011	10 years	11,1 %
Freiburg	39 %	1982	21 %	2016	34 years	46,2 %
Gent	63 %	2008	38 %	2018	10 years	39,7 %
Leuven	62 %	2016	49 %	2019	3 years	21,0 %
Lund	42 %	2007	34 %	2018	11 years	19,0 %
Malmö	53 %	2003	34 %	2018	15 years	35,8 %
Pontevedra	42 %	1999	28 %	2016	17 years	33,3 %
Trondheim	57 %	2009	50 %	2014	5 years	12,3 %
Vienna	40 %	1993	27 %	2016	23 years	32,5 %
Vitoria Gasteiz	36 %	2006	24 %	2014	8 years	33,3 %
AVERAGE	49 %		35 %			29 %

An interview was conducted in each city with a local expert who monitored these changes or was involved in these changes. The questions focused on the reasons for successful changes in travel habits in their city, and the measures that shifted their citizens from using a car to public passenger transportation, cycling or walking. The role of the SUMP's in these changes was also examined.

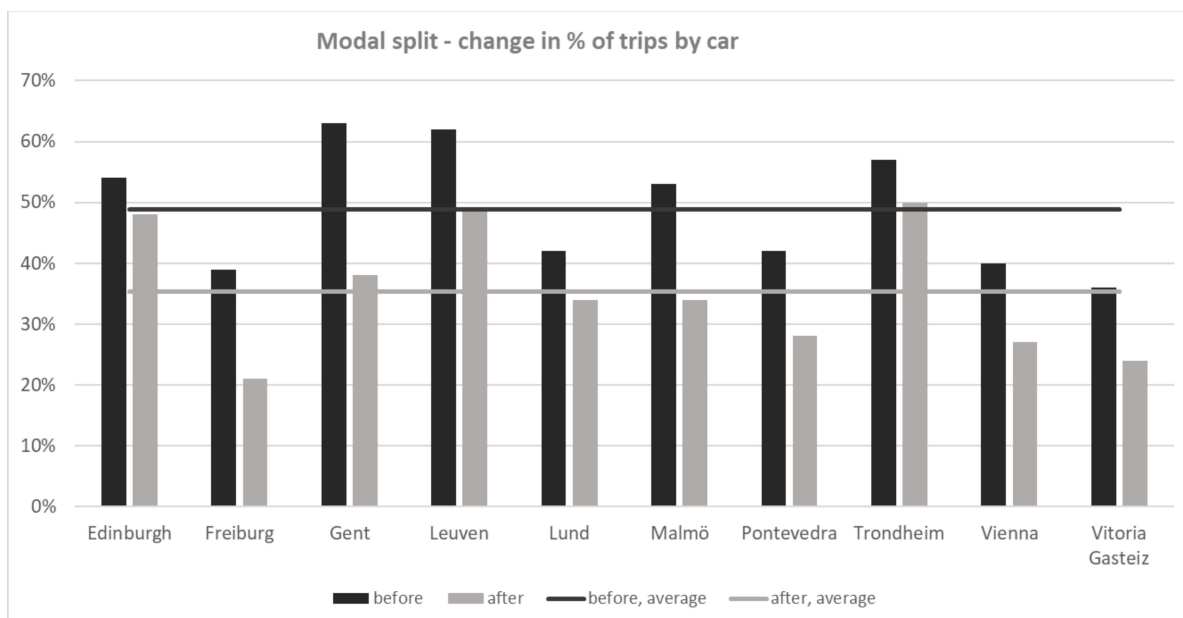


Figure 1. Modal split – change in shares of trips by car for each city

3. RESULTS

The results show that all the cities in the analysis have a SUMP or a similar document. Many cities have also additional, more specific documents that strategically address individual travel modes, e.g., cycling strategy or parking policy. Their responses show that most cities have been developing their SUMP (or similar) for a long time and use it as a starting point for implementing ambitious and effective measures. It helps setting modal split goals and reaching those goals.

Not just one individual measure has brought about change, but combinations of measures are always important for change. As a rule, they apply the "push and pull" principle. When implementing unpopular or restrictive measures and, they at the same time as fundamentally improving measures, thoroughly improve the conditions for alternative modes of mobility.

For example, the case from Freiburg states that as push factor they implemented the measures: higher parking fees, reduction of parking space and partly decreasing the capacity of the motorway network. On the other hand, they took care for pull factors: improving public transportation (especially tram tracks), improving cycle network, improving sharing services (car sharing, bike sharing). While improving the conditions for using the alternative modes they also did some marketing for environmentally friendly traffic modes to let people know that improvements have been made.

All the successful cities have the same principle in common – restraining car traffic and improving all the alternative modes, many of them focusing on public transportation, and also on improving conditions for cycling and walking.

The approach that encapsulates the majority of implemented measures in the cities researched is the road space transformation which can be a push and pull approach itself. It usually takes up space from cars, reduces their speed, and at the same time provides the infrastructure for sustainable alternatives in this space. These are comprehensive measures, such as integrated traffic calming, parking management, establishment of friendly traffic areas, thorough reorganization of public transport, dense cycling network, fast cycling connections, etc.

4. DISCUSSION AND CONCLUSION

The results from all the cities point in the same direction. The cities need to implement SUMP (or similar) to set up the foundation for successful modal shift. Other, more specific documents can also be beneficial when trying to improve conditions for a specific travel model. Unpopular or restrictive measures need to be implemented together with providing the infrastructure for sustainable modes of mobility to ensure that people will change their travel habits.

One important thing that has been highlighted in the interviews and could be further explored is the importance of political support since it can be a decisive condition for making progress.

There have been some measures implemented in several Slovenian cities, but not as a comprehensive approach with all sufficient push and pull measures that would make a significant shift from car use to other modes. For example, some restrictions for cars have been implemented, but no sufficient improvements have been made to provide better experience of public transport or cycling as competitive modes to car use.

In our opinion any city or town, regardless of the mentality of its citizens, can be successful in modal shift if there is a comprehensive approach of both, push and pull measures. Experience shows, that when people are given a realistic and efficient alternative to car use, they will use it, especially if car use is restrained. To succeed this, the key element is also the political will since without it, SUMP (or similar) document cannot be prepared and implemented. The same applies for the measures that should be implemented to achieve the actual modal shift.

The results of the research can be used as a recommendation for cities with large share of car use which are starting or struggling with changing their modal split in favour of public transportation and active mobility. The experience from successful European cities have been included in new Guidelines for the preparation of municipal SUMP in Slovenia. It is expected that the new generation of SUMP in Slovenian municipalities will be set much more ambitiously and will contribute more quickly to improving the quality of life.

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