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Sustainable Urban Mobility in Europe – from Planning to Implementation

Statement of Issue

The overall objective of the SUITS project[1] is to enhance the capacity of small and medium local authorities to develop and implement sustainable, inclusive, integrated and accessible transport strategies, policies, technologies, practices, procedures, tools, measures and intelligent transport systems that recognise the end-to-end travel experiences of all users and freight.

SUITS is a CiViTAS project, which is a network of cities dedicated to cleaner, better transport in Europe and beyond. CiViTAS has implemented over 800 innovative urban transport measures and solutions in over 80 cities across Europe since 2002. CiViTAS argues that a "Sustainable Urban Mobility Plan" (SUMP) is an important part of sustainable urban transport innovations. A SUMP is a strategic transport plan which helps cities to deliver on their sustainability objectives by outlining the city's transport and mobility measures.

This policy brief discusses the importance of SUMPs for sustainable mobility. We test the hypothesis that the development of an ambitious plan in itself does not necessarily translate into successful policies and measures and in actual sustainable urban mobility. We find that the existence of a SUMP correlates positively with a higher share of public transport but that the existence of a SUMP does not as yet have a significant impact on the overall share of non-motorised modes of transport.

Subsequently, the potential reasons for this implementation gap are discussed along with plans about how the SUITS project can contribute to bridging the gap. In so doing, this policy brief provides recommendations to cities, national funders and to SUMP funders, i.e. the European Commission.

[1] SUITS has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no 690650 (www.suits-project.eu).

Policy options

According to the European urban mobility observatory (ELTIS), a Sustainable Urban Mobility Plan (SUMP) is a strategic plan designed to satisfy the mobility needs of people and businesses in cities and their surroundings for a better quality of life. The concept for SUMPs has been articulated in the European Union's 2013 Urban Mobility Package. The concept describes the main features of a modern and sustainable urban mobility and transport plan. Amongst others, a SUMP comprises the "balanced and integrated development of all modes", implicitly emphasising that sustainable mobility includes reducing individual motorised transport as far as possible.

Consequently, the EU supports the implementation and testing of new urban mobility approaches as part of its CiViTAS initiative, a networking platform which works on thematic areas such as Car-Independent Lifestyles, Collective Passenger Transport, and Demand Management Strategies. The EU also provides financial support for such urban mobility projects through European Structural and Investment Funds as well as other financial instruments. In many EU member states, the transfer of EU funds to cities to support their sustainable transport and mobility measures is contingent on the existence of a SUMP.[2]

According to the ELTIS city database, there are 542 cities in the EU, Iceland, Norway and Switzerland, which have been involved in SUMP activities and initiatives.[3]

This SUITS policy brief investigates the extent to which involvement in SUMP activities and initiatives correlates with actual sustainable urban transport and mobility. In other words: it compares ambition with reality. It does so by comparing the actual transport modal split of European cities as indicated by the EPOMM database[4] which have been involved in SUMP activities with those cities which have not. For the purposes of this policy note, a city, which has a comparatively low share of trips with private cars is regarded as having comparatively sustainable urban transport and mobility. If the city has a SUMP, it should have a more sustainable transport system than an average city without SUMP, as it has a higher ambition and it should have a lower proportion of journeys made by private vehicles.

On the basis of the analysis, the paper provides recommendations to cities as implementing agents and to SUMP funders, i.e. EU member states and the European Commission. In a further step, it discusses potential reasons for existing implementation gaps. It finally concludes by highlighting how the SUITS project can contribute to bridging existing implementation gaps.

[2] More information for each member state can be found here: http://www.eltis.org/mobility-plans/member-state-profiles. The national provisions may discriminate between cities of different size, but in principle even small cities need to develop SUMPs.

[3] The level of ambition, activity and action may vary significantly.

[4] European Platform on Mobility Management (EPOMM), http://www.epomm.eu/tems/index.phtml

Sustainable Urban Mobility in Europe: A Status Quo Analysis

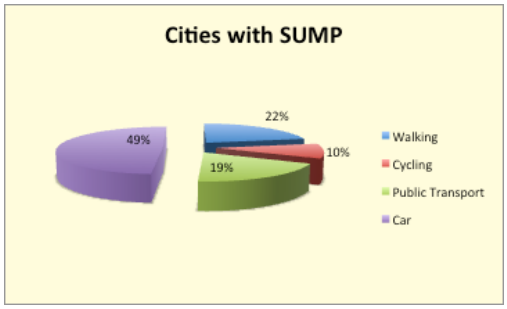
To examine if the existence of a SUMP in a city leads to a more sustainable modal split, data from the ELTIS[5] and EPOMM websites were combined. The initial data sample consisted of 472 European cities where information about the modal split was available from EPOMM and could be matched with ELTIS. Data older than 10 years was excluded, in order to increase the analysis' reliability. This includes modal split data from 2007 onwards. With these exclusions, 396 cities were left in the sample. As illustrated in Table 1, 55% of the cities have already implemented or are preparing a SUMP, on average, such cities are larger in size compared to cities without SUMPs. Figure 1 graphically illustrates the differences in modal splits between cities that participate in SUMP initiatives and those that do not. While the share of pedestrian and bike traffic is almost equal in the two groups of cities, there are significant differences concerning motorized individual mobility and public transport. In cities with SUMPs, the share of cars tends to be lower (13% vs. 19%) in favor of an increased percentage of public transport (55% vs. 49%).

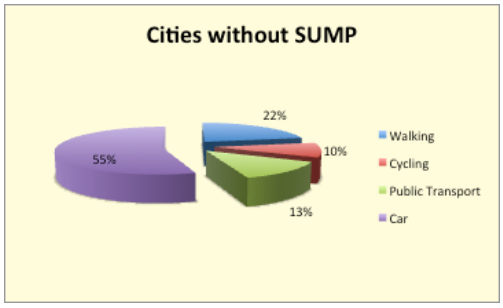
Table 1: Descriptive statistics and statistical comparison between cities with and without SUMP

		SUMP						**t-test**	
		no			yes			t	df
		N	*Mean*	*SD*	*N*	*Mean*	*SD*		
Inhabitants		179	172,629	371,698	217	483,966	859,851	-4.51***	394
Modal Split (%)	Walk	179	21.8	9.2	217	22.5	11.01	-0.74	394
	Bike	179	9.5	8.6	217	9.7	9.44	-0.18	394
	PT	179	13.3	11.0	217	18.7	11.52	-4.70***	394
	Car	179	55.5	14.3	217	49.1	13.86	4.44***	394

Note: ***p < 0.001; **p < 0.01; *p < 0.1; SD = standard deviation

Figure 1: Modal split of cities with and without SUMP





[5] ELTIS, http://www.eltis.org/mobility-plans/city-database

The differences in modal shares are confirmed by statistical analyses. The existence of a SUMP is positively correlated with a higher share of public transport and a lower share of car traffic, respectively. Interestingly, however, cities with a SUMP tend to not have a higher bicycle share.

A statistical comparison of the mean share of the transport modes between cities with and without SUMPs underpin the differences illustrated in Figure 1. Apart from population size, the results show that the two groups of cities significantly differ with regard to the average percentage of both car traffic ($t = 4.44$; $p < 0.001$) and public transport ($t = -4.70$; $p < 0.001$).

Remarkably, our statistical analyses confirm the results from a survey conducted by the SUMPs-Up project (Staelens & Plevnik 2017), a SUITS sister project funded under CiViTAS. The survey found that many cities aim to increase their bicycle share, but experience obstacles for an actual implementation of bicycle measures: In the survey of 441 European cities, 140 cities report the need for support in *selecting* bicycle measures, whereas 264 cities highlight the need for support in *implementing* bicycle measures.

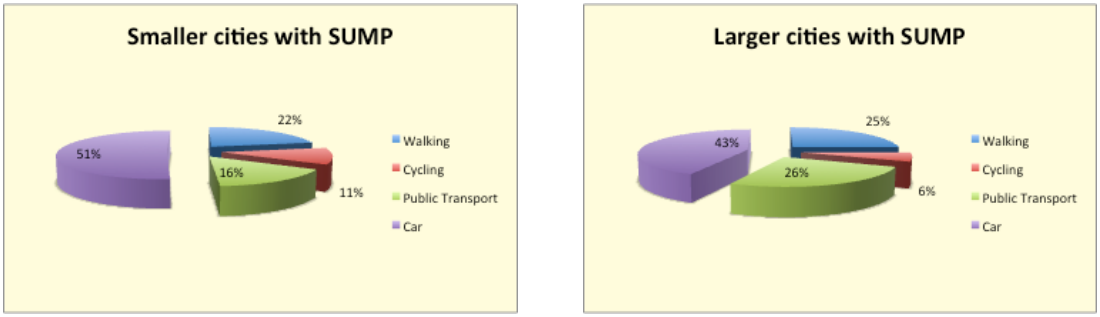
Moreover, our analysis reveals that larger cities are more likely to adopt a SUMP: We compared cities with less than 500,000 inhabitants with cities having more than 500,000 inhabitants and find that larger cities possess a significantly lower share of cars and cyclists, but a higher share of pedestrians and public transport options (see Table 2 and Figure 2). Moreover, while smaller cities' modal split is still dominated by cars (51%), sustainable transport options (walking, cycling, public transport) dominate in larger cities (57%).

Table 2: Descriptive statistics and statistical comparison between smaller and larger cities with SUMP

		City size						**t-test**	
		Small and medium			large			t	df
		N	*Mean*	*SD*	*N*	*Mean*	*SD*		
Modal Split (%)	Walk	164	21.8	11.0	53	24.9	10.8	1.78*	215
	Bike	164	10.8	9.9	53	6.3	6.9	-3.04**	215
	PT	164	16.4	10.9	53	25.7	10.7	5.41***	215
	Car	164	51.1	13.5	53	43.1	13.2	-3.73***	215

Note: ***p < 0.001; **p < 0.01; *p < 0.1; SD = standard deviation

Figure 2: Modal split of smaller and larger cities with SUMP



Note: < 500,000 inhabitants = smaller cities; >500,000 inhabitants = larger cities

Policy recommendations

SUMPs are successful

The fact that cities stipulate SUMPs or are involved in SUMP activities positively correlates with a reduction of the share of the private car in the actual transport and mobility patterns of the city. This may be because SUMPs are more likely to be created in cities with successful sustainable transport measures and/or the fact that a SUMP has been developed may be more likely to lead to the implementation of successful sustainable transport measures. In consequence, cities without SUMPs should pursue the SUMP cycle in order to find a successful pathway towards sustainable local mobility. Many small and medium sized European cities have not yet set up a SUMP and they should be supported to do so.

SUMPs are not sufficient

When it comes to supporting cycling, the analysis confirms that developing objectives and planning measures does not necessarily lead to actual change. It appears that more cycling measures need to be implemented successfully in Europe to make a more profound contribution to the objectives of sustainable development. The mere existence of a SUMP does not currently alter the modal share of cycling. Moreover, even after having implemented a SUMP, the results reveal that large cities still lag behind their smaller counterparts with regard to the share of bike traffic. It is proposed that the European Commission and member states should fine-tune their support for cities to actually implement measures fostering non-motorised transport modes. Particular attention should also be given to the creation of support mechanisms for public transport in small and medium sized cities, as cars remain the dominant means of transportation.

Future research is needed to find the reasons of the implementation gap

There are many reasons for the implementation gap, many of which may be well known. However, the fact that this gap still exists points to a lack of knowledge, funding or willingness. The following section outlines some potential reasons why cities may fall short of implementing sustainable transport measures despite ambitions articulated in the SUMP.

Reasons for the implementation gap

This section focuses on the question “why?” cities stipulate SUMPs but then struggle to implement ambitious walking, cycling and other sustainable measures. We developed this list based on a literature review of CiViTAS projects. We consider this a non-exhaustive list, but assume the highlighted factors to be significant.

Ring-fenced funds

The EC-funded EVIDENCE project found that local policy makers developing a SUMP found it challenging to make a case at a national level and to influence national decisions on funding streams and priorities. So, whilst initiatives deployed in a SUMP may focus on building a bottom-up consensus around social and environmental objectives, in actuality many aspects of an effective plan may be perceived by those responsible for allocating national expenditure to be less important than directing funding towards major infrastructure schemes (Shergold & Parkhurst 2016). Public transport, alongside individual motorised transport, can be implemented in major infrastructure schemes. There are concerns, that whilst the rhetoric of SUMPs is gaining traction, there has been little discernible change in the funding allocated to deliver integrated packages of small interventions with focus on active modes and the management of demand.

Lack of confidence

The EVIDENCE project also highlights the perception of many city authorities that small initiatives do not compete with "traditional" transport infrastructure in terms of delivering economic benefit. As a consequence, potentially fewer of these initiatives or interventions are being made, and the implementation of the SUMP is less effective.

Limited availability of resources and skills

Another reason for the observed gap between planning and action might be that local authorities lack the necessary human and financial resources or skills for implementing SUMP-related measures. According to the EU co-funded CH4LLENGE project, administrations should ideally possess, inter alia, the following skills: process leadership, project management, strategic thinking, and knowledge of possible measures. However, on average, only about half of the skills are at least partially available in the workforce (CH4LLENGE, 2015).

Need for adequate monitoring and evaluation

Monitoring and evaluation represents a key element in SUMP planning and implementation. SUMP measures should be assessed both from an ex-ante and an ex-post perspective to examine their necessity, value for money and effectiveness in increasing the sustainability of urban mobility (Burggraf & Gühnemann, 2015). If appropriate monitoring schemes are not in place, cities might not be able to detect gaps between plans and their implementation. This can lead to an omission of timely interventions and ultimately delay or impede SUMP implementation.

The role of car traffic

Transport network performance and traffic-induced air pollution tends to be less of a public issue in smaller cities and therefore, the pressure for policy makers to implement measures to substitute cars with more sustainable modes of transport may be lower. A high density of inhabitants and working places increases the probability of crowded streets and street segments, which in turn increases the probability of hot spots for congestion and air pollution.

What SUITS project will contribute - a way forward

SUITS takes a sociotechnical approach to capacity building in local authorities and transport stakeholder organisations with special emphasis on the transfer of learning to smaller sized cities, making them more effective and resilient to change in the judicious implementation of sustainable transport measures.

Among other material, SUITS will provide information and learning modules about innovative financing mechanisms and public procurement. The SUITS literature review and analysis of the partner cities found significant need for capacity building in these fields (Diana et al., 2017). The project thereby aims at overcoming the lack of funding for certain measures and the lack of confidence of many local decision makers that small-scale measures do not deliver value for money.

The SUITS approach also aims at improving process leadership, project management and strategic thinking. Working with nine cities to model gaps in their understanding, motivation, communication and work practices, will provide each city with a map of its own strengths and weaknesses with respect to sustainable transport planning. From this, strategies to enhance capacity, based on each authority's needs will be developed and organisations provided with the necessary techniques to increase their own capacity, mentored directly by research partners. Local champions will be trained to continue capacity building after the project.

Finally, SUITS will develop a data analysis methodology, which integrates freight and passenger data. Based on solid data analysis, cities may improve their evaluation of the measures and impact assessment. They may also improve their transport models to fine-tune their measures to reduce congestion and air pollution.

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