Här finns den lediga kapaciteten i storstadstrafiken

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Here is the unused capacity in urban traffic (Engelska)

Abstract [en]

An enormous and essentially hidden unused traffic capacity is a feature of many major cities. All attention is focused on situations when capacity is insufficient or where traffic grinds to a halt. This study reverses the perspective. Here unused capacity is revealed using, among other things, examples from the most congested parts of Stockholm's road and urban rail network. Harnessing unused capacity, in other words increasing efficiency, allows more eco-friendly mobility.

• Each car on the road has on average 3.8 unused seats.

• A car stands parked for 96 per cent of the time.

• Heavy congestion affects only very small parts of the road and street network, and then only at limited times of the day, week and year.

• Some forms of transport are more efficient than others in terms of economy, capacity, the environment and the area they use. A bus carries seven times more passengers than cars in urban traffic, and is five times better for the environment. In terms of area, commuting by urban rail is 60 times more efficient than by car.

• Using reserved lanes, a bus can carry 15 times more passengers than cars.

• If motorway traffic-flow stoppages are prevented, thousands more cars can get through. Small changes produce great affects. One example: reducing car numbers by 500 before a stoppage occurs allows nearly 10,000 more cars to get through over the coming hours.

• Local rail lines can be used by goods traffic at night.

• A more equal distribution of travellers between public transport's carriages, buses and trains would allow more people to travel.

• Where the number of urban rail lines is insufficient, or where they have yet to be built, a parallel service of fast buses using reserved lanes provides an efficient solution.

• Reversible and reserved lanes for public and other efficient forms of transport can tap unused capacity.

• Waterways can be used more, and be better connected with other forms of transport.

• Some analysts predict that self-driving vehicles will allow four times more cars onto the roads and reduce the car fleet, perhaps to a tenth of today's figure. It is unclear if these estimates are realistic, and more debateable whether these vehicles will reach mass market levels in the foreseeable future. But if so, traffic- system capacity would increase dramatically.

• Empirical information on urban traffic is surprisingly insufficient, and is often substituted by modelled calculations whose relationship to actual conditions is often unclear. Complementary data is particularly desirable in the case of commercial traffic, specifically the types of road user and conveyor who get stuck in congestion: the composition of vehicle types and their purpose, and their origin and destination.

• The results presented here highlight two questions: can we justify continued major investment in traffic infrastructure for inefficient means of transport; and why can we not offer urban travellers and conveyors better-quality services than those they currently endure?

• One all-embracing and challenging question is this: how can the enormous unused capacity, revealed here, be harnessed and distributed so that everyone, and the climate and urban environment too, may benefit from the new order? There are risks that the environmental benefits yielded by more efficient patterns of use might be undermined, disappear entirely or even be reversed by increased travel. The means are available to counteract developments of this kind.