

## Deciphering the traffic of the future

**Transport researchers at Kantar TNS have developed a model which allows them to understand which modes of transport will be popular choices in the future. This can then be used as a basis for traffic planning and future transport offerings. Dr. Adi Isfort and Rolf Kullen explain how it works.**

The proportion of the global population living in cities is constantly growing. 55 per cent of people worldwide already live in cities and predictions are that this growth will continue. Developing urban transport is therefore a key challenge for the future.

This is why traffic research increasingly focuses on city traffic with numerous possible modes of transport. It is important for cities, municipalities and numerous companies to know whether residents will choose the bus, the train, their own car or a new option such as a car sharing club, as this will form a central planning element.

When deciding on a certain type of transport, each person is conflicted between their personal preference and the respective obstacles and restrictions of this mode of transport. If we can successfully understand this conflict and the resulting decision to take a certain mode of transport then all the players, from city planners to transport providers and car manufacturers have a useful tool at their disposal for urban transport. This means that people's preferences can be taken into account when a city's transport infrastructure is being developed and the transport options can be optimised for customer requirements, as well as sustainably reducing environmental pollution in cities.

Kantar TNS has developed this model showing transport choices and used it in a number of German cities and the international roll-out to 26 cities across the globe will take place this summer. The model works on the basis that the selection of a mode of transport depends on three factors:

- 1. The main reason for the planned journey:** the decision to take a certain mode of transport is usually very habitual. It is largely determined by the purpose of the journey. It therefore makes sense to consider typical journeys – to work, to go shopping etc. – individually and then summarise a model for the entire market.
- 2. The market factors present:** factors which decisively influence the mode of transport chosen are the availability and characteristics of a mode of transport and subjective assessments such as comfort, which correspond to people's requirements with varying levels of elasticity.
- 3. The appeal of the mode of transport:** to what extent does the use of the respective mode of transport correspond to the lifestyle and personal preferences of the individual? The appeal of a mode of transport plays a decisive role. Our model incorporates this as a preference portion in assessing the mode of transport. Yet, this appeal is either supported by certain market factors – for example, the train leaves every ten minutes – or restricted by them, such as the high costs or low availability of the mode of transport. The modal split shows how individuals come to a decision in this interaction between appeal and market factors. It accounts for how different modes of passenger transport are distributed in a city. Kantar TNS individually recorded the market factors and appeal of each mode of transport. This resulted in a clear picture of the dynamic of decisions to take a certain mode of transport.

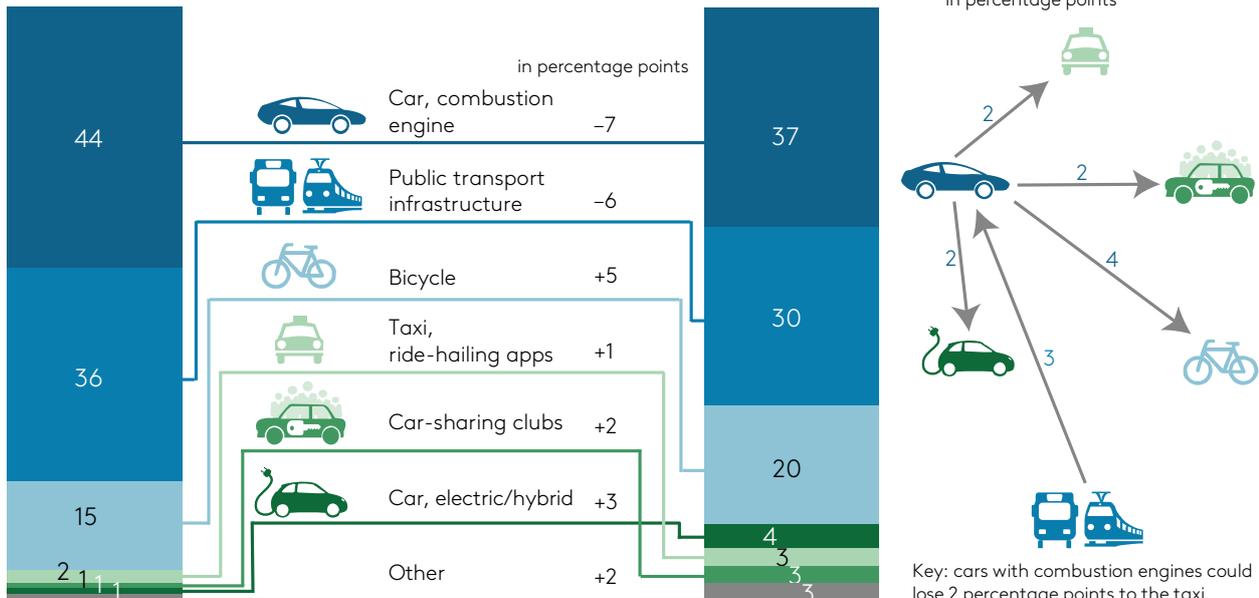
## Deciphering urban transport

A fictional example of a major city

Actual traffic distribution  
(Modal Split)

Preference shares  
stated by users

Potential changes for the car  
(combustion engine) as a  
mode of transport  
in percentage points



Key: 44 per cent of users drive a car. However, according to preferences, only 37 per cent stated that they do so gladly. Therefore, the car could lose 7 percentage points in terms of user preference.

Key: cars with combustion engines could lose 2 percentage points to the taxi, electric car and car clubs respectively and 4 percentage points to the bicycle. Public transport infrastructure could lose 3 percentage points to the car.

Source: Kantar TNS

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The analysis of the interaction between the individual modes of transport shows which transport options could potentially attract a larger proportion of passengers and which modes of transport could lose a proportion if certain conditions change. Driver analyses were used to investigate the respective influence on these proportions. This produced a closed model which quantifies the operating principles of traffic dynamics and delivers clear approaches for prioritising areas of action. The results therefore clearly indicate which market factors influence the current and future market shares – the modal split – of the different modes of transport.

Following this method, our studies have shown that – unsurprisingly – the appeal of local public transport is lower than its actual use but that this – surprisingly – also applies to the use of private vehicles. Conversely, the appeal of alternative modes of transport, from bicycles to taxis and car-sharing clubs, is significantly greater than the actual use of these modes of transport.

Market factors which – currently still – encourage the use of local public transport include the opportunity to use travelling time to do other things and safety in the event of an accident. Factors such as protection from the weather and the simple option to transport passengers and luggage result in a preference for private vehicles. Some shy away from using bicycles due to the lack of safety and, of course, because of the poor protection against the weather. Obstacles to car club options include, in particular, a lack of availability and the costs.

By determining the influence of each identified market factor on the modal split, appropriate measures can be derived which will lead to a change in choices of transport options. Even the effects of the actual journey taken can be assessed, allowing future traffic behaviour to be predicted and modelled and making the model exceptionally suitable for predicting future market share.

In order to better understand the future of transport, we will need to look beyond Germany. Extremely varied developments in the area of transport are taking place in major cities around the world. There are both heavily regulated approaches where the cities attempt to change transport behaviour using regulations and city planning measures as well as heavily provider-driven approaches. These consist, on one hand, of digitally assisted options and on the other, of new product developments in the area of networked, autonomous and electric transport.

In order to fundamentally and comprehensively understand these issues, Kantar TNS has started a global study exploring the future of transport, based on the approach described. We are measuring the transport behaviour of city populations in all continents to identify changes and reveal options.

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