

Making public transport more efficient:

4 success factors for local transport in times of tight budgets

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Making public transport more efficient: 4 success factors for local transport in times of tight budgets

Public transport faces a paradigm shift. Rising costs, staff shortages, and pressure for sustainability – public authorities currently face numerous problems and challenges. A key solution to these problems is the digitalisation of public transport. Yet, there is still too much resistance to change, with organisations holding onto the status quo rather than consistently embracing digital solutions that could reduce long-term costs and enhance public transport attractiveness.

Given the current financial situation, a common pattern emerges: When funding expires or operating costs cannot be covered, bus routes are cut and new, demand-responsive mobility concepts are discontinued. Passengers clearly feel the impact through service cancellations, delays, and reduced service offerings.

There is a better way: We have identified four success factors that specifically reduce costs in public transport – without noticeably compromising service quality for passengers or affecting staff working conditions.

Operating costs

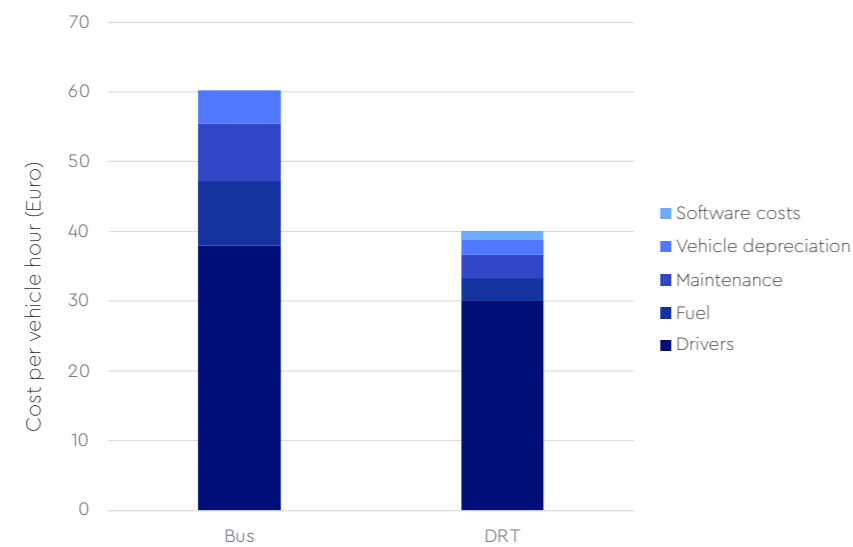
Detailed data on public transport usage is the key to cost-efficient operations. It enables flexible route adjustment and services to be tailored to demand. Especially during periods of low demand, such as weekends, demand-responsive vehicles can be deployed much more efficiently than large buses.

A look at weekend services clearly shows the efficiency:

Replacing three buses with fixed routes and unattractive intervals (every two hours) with three demand-responsive vehicles in corridor operation saves around 350 operating kilometres. Instead of annual operating costs of 372,000 euros for regular service, the on-demand service costs only about 174,000 euros – a significant saving. In addition, the service is considerably more attractive through flexible routes and shorter waiting times.

The main cost reduction lies in reducing mileage-dependent expenses:

- In this example, the implementation of flexible demand-responsive transport enables savings of around 200,000 euros or 40 percent of operating costs. The larger the network, the higher the savings.
- On average, the costs for on-demand vehicles per hour are 30 percent lower than in the regular system with standard buses.¹



Passenger kilometres per vehicle-hour

Besides operating costs, the number of transported passengers per vehicle hour is an important metric for evaluating the economic efficiency of public transport services. However, very few transport companies and independent cities can say how many people use their buses outside rush hour. Precise data on the actual passenger numbers is lacking, yet this data enables targeted improvement of transport planning and optimal resource utilisation.

According to the German Federal Statistical Office, the average utilisation of buses has consistently remained at around 20 percent² for years. This corresponds to twelve occupied seats in a vehicle that typically offers around 60 seats, not counting additional standing room. Demand-responsive transport can significantly increase efficiency in poorly utilised bus services.

The number of passengers per vehicle hour is higher in on-demand transport than on bus lines with low demand.

Driver hours

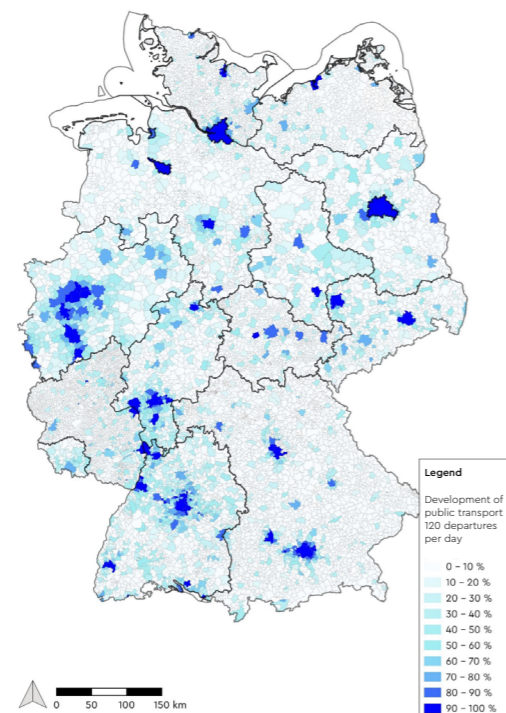
Driver hours are an important factor for the safety, quality, and punctuality of public transport. Additionally, new drivers are trained faster using intuitive bus navigation systems. They can operate more safely and reliably on the road as they can focus entirely on driving.

Depending on the route complexity, accompanied route familiarisation for new staff can be reduced by an average of 2 weeks and 3000 euros.³

Service coverage quality

Efficient use of financial resources does not automatically mean reducing services. We are certain: Reorienting public transport toward digitalised, demand-responsive concepts ensures long-term public service provision. More people are reached at the same cost, promoting sustainable shifts from private cars to public transport.

55 million German citizens living in suburban and rural areas have only mediocre public transport options at their doorstep.⁴



On average, the quality of public transport infrastructure in Germany is only satisfactory (quality class D).⁵



Result

Public transport digitalisation is key to greater cost efficiency and sustainability. With flexible, demand-responsive solutions from ioki, costs can be reduced, empty runs avoided, and training time for new staff optimised. Simultaneously, passengers benefit from improved service. The result: A more efficient, more attractive, and sustainable public transport system.

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Bibliography

¹ Comparison: costs per vehicle hour of regular service bus vs. on-demand vehicle.

² Federal Statistical Office of Germany (2019): Zahl der Woche Nr. 04 vom 22. Januar 2019; https://www.destatis.de/DE/Presse/Pressemitteilungen/Zahl-der-Woche/2019/PD19_04_p002.html (Last accessed on October 18, 2024).

³ Information is based on customer statements on the use of ioki Route.

⁴ Germany-wide analysis of public transport coverage in Germany with a focus on rural areas (2021).

⁵ Based on analysis by ioki Plan.

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