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Intercity ridesharing to the rescue during the railway strike ?

What we have learned from large-scaled BlaBlaCar data.

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This note summarizes the following published research paper :

Yeung, T. Y. C., & Zhu, D. (2022). "Intercity ridesharing to the rescue: Capacity flexibility and price stability of BlaBlaCar during the 2018 French railway strike." *Transportation Research Part A: Policy and Practice*, 164, 270-290.

Motivation

Mass public transportation modes (e.g., subway, bus and railway) are the backbone of urban and national transportation systems, but they face various sources of disruptions: accident, maintenance, strike, etc. Facing disruptions, passengers search for alternatives within both the same transportation mode and among others. Being able to use multiple transport modes (**multimodal**), as well as to smoothly switch from one mode to another (**intermodal**) reinforces the resilience of the transport service. While short disruptions in the urban public transportation system have been well documented, **we know very little about user behavior under long-term, nationwide disruptions, due to data availability**. Nevertheless, it is important to study these situations because they allow us to have a global vision and to trace long-term behavioral changes.

From April to June 2018, employees of SNCF (the French state-owned railway company) went on a **three-month strike** against the pension reform, withholding their labor **two out of every five days**. Since SNCF is

a monopoly, the strike impacted the entire French railway system, especially the slow, regional trains (TER). Within the same mode, passengers could choose to cancel the trip or to reschedule it to a non-strike day or a non-strike train. If they want to switch to another mode, popular alternatives in the absence of intercity trains would be driving, taking a bus, and ridesharing. We are particularly interested **in long-distance, intercity ridesharing**, a well-developed market in France, led by the French unicorn company BlaBlaCar. BlaBlaCar is a nice example of the rapid emergence of platform-based transportation service providers in the past decade. These platforms do not own the fleet. They are intermediaries that facilitate and improve the quality of driver and passenger matchups.

In the BlaBlaCar platform, drivers themselves set the price of the trip. However, the prices are regulated by the platform. BlaBlaCar shows **a default recommended price** for each trip, based on the **cost-sharing principle** required by the government. **Drivers can deviate from the recommendation**, but the upper and lower bounds are fixed by the platform. This unique, softly self-regulated pricing scheme is also our point of interest.

Methodology

Anonymized trip-level information could be retrieved from the API of BlaBlaCar. We have built a rigorous data collection and cleaning protocol and collected more than **1 million trip offers** covering 82 representative routes (41 round trips) from April to July 2018 on a daily basis from the API. The routes are defined by identifying “first-tier” and “second-tier” cities. First-tier cities are the seven of the ten most populated French cities in 2018. Second-tier cities extend the population threshold. Afterwards, we made all the possible connections between the first-tier cities, as well as the connections between each first-tier city and its neighbouring second-tier cities. Finally, we dropped some routes that have overlaps.

For each trip, we could observe key variables such as the departure and arrival time, cities, and price asked by the driver. The recommended prices are not provided in the API. As a result, we collected them by attempting to publish rides on the platform without eventually publishing them. We have also collected external data on the SNCF daily overall strike rate, the existence of a direct train connection of each route, and the bank and school holidays.

Key results and recommendations

Our empirical analysis shows that, **on an average strike day, the number of offered seats increased by approximately 6 %, while the number of booked seats rose by 33 %,** showing the **capacity flexibility** of platform-based transportation services compared to traditional operators. Both supply and booking increased quite a lot, but the impact of railway strike on booking is even more remarkable. However, **despite the spikes in demand, prices remained stable during the strike.** This finding seems counter-intuitive if we only follow the market rules. Since booking increased more than supply on strike days, even if supply still surpassed booking in the absolute term, drivers would have been in a more advantageous position compared to the non-strike days, and would have charged higher prices.

Why haven't BlaBlaCar drivers reacted according to the market rules? We argue that **the price recommendation mechanism helped maintain the price stability on the platform during the strike.** What is more interesting is that

the mechanism is an effective enforcement of the policy laid down by the French government to uphold **the cost-sharing principle** on ridesharing platforms. According to the latest update of French Transportation Law based on the 2019 Mobility Law (Loi d'Orientation de la Mobilité), ridesharing drivers are allowed to receive compensation, but only in order to cover the costs of the trip. By implementing a recommended price, the platform successfully nudged the drivers to set price around the cost-sharing level. The **price resilience** has been proved even during huge market fluctuations.

Policy implications and conclusion

While the economic and environmental benefits of ridesharing have been on the policy agenda, policymakers have also started to be interested in the role of ridesharing in a multi-modal transport system and for less-connected areas. Our paper provides empirical evidence of the flexibility capacity of intercity ridesharing in the event of a nationwide railway disruption. Moreover, we demonstrate the price stabilizing effect of the price recommendation system, offering insights to the construction of a resilient transportation system, one of the priorities of the EU sustainable and smart mobility strategy.