



GovReg Brief

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ridesharing drivers'
motivations with
field experiments

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October 2021



The research summarized in this GovReg Brief series note comes from the following articles by the same author:

Zhu, Dianzhuo (2017), “More generous for small favour? Exploring the role of monetary and pro-social incentives of daily ride sharing using a field experiment in rural Île-de-France”. *Communications & Strategies*, (108), 77-97.

Zhu, Dianzhuo (2021), “The limits of money in daily ridesharing: Evidence from a field experiment”. *Revue d'économie industrielle*, 173, 161-202.

This GovReg Brief is also available in French.

Understanding ridesharing drivers' motivations with field experiments

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Research objective

Ridesharing: increase participation to meet its potential

Personal vehicles are a major source of urban pollution, accounting for 56% of CO2 emission in France. In addition to pollution, they also create other negative externalities such as congestion and noise. In rural areas, people depend on cars due to an insufficient supply of public transportation. Ridesharing² shows potential for solving environmental and societal challenges.

Nevertheless, ridesharing remains a marginal practice. According to the French Ministry of Ecological Transition, ridesharing only accounts for 3% of the trips done by personal vehicles for work and study³. Encouraging the practice of ridesharing requires a better understanding of the behaviour of drivers and passengers. **How can we design incentives so that the ridesharing take-up rate will meet its full potential?** The two pieces of research presented in this note tackle this challenge by examining drivers' and passengers' motivations.

Methodology

An academia-industry collaboration

The researcher had the opportunity to collaborate with a French ridesharing company, Ecov. Ecov was founded in 2014 with the mission of democratizing ridesharing in suburban and rural areas. Instead of developing mobile applications, Ecov builds ridesharing pickup points, which are more adapted to short-distance trips in these areas. Passengers come to the pickup point and buy a ticket. The destination will then be displayed on one or several sign(s) located several hundred metres in front of the pickup point. All drivers passing by can see the request and decide whether they wish to pick the passenger up or not. After the trip, drivers having picked up a passenger can receive their remuneration on Ecov's website by entering the code on the ticket. In 2016, the first pickup points were built in the western suburbs of the Île-de-France region surrounding Paris.

Exploratory studies have found that only 20% of the drivers claimed the monetary reward. Many drivers expressed their willingness to help the passenger and their limited interest in

² According to the French Transportation Law, Article L. 3132-1 approved on 17 August 2015, Ridesharing is « L'utilisation en commun d'un véhicule terrestre à moteur par un conducteur et un ou plusieurs passagers, effectuée à titre non onéreux, excepté le partage des frais, dans le cadre d'un déplacement que le conducteur effectue pour son propre compte. » [translation: The shared usage of a motorized land vehicle by a driver and one or several passengers, in which no money changes hands except in contribution to the costs and in which the driver is undertaking the trip for his or her own purposes.]

³ <https://www.ecologie.gouv.fr/covoiturage-en-france-avantages-et-reglementation-en-vigueur>

being paid. This phenomenon immediately captured the researcher's attention and led her to ask more questions: Would the low claim rate persist if the payment was large enough? How many drivers are motivated by money, and how many by prosocial / altruistic sentiments (Andreoni, 1990)? Would prosocial motivations be crowded out if the monetary incentive was too high (Benabou and Tirole, 2003)?

Two field experiments were conducted to try to answer these questions.

Experiment design and results

The coexistence of monetary and non-monetary motivations: Experiment design and results

The first experiment took place in January and February of 2017. The researcher wanted to know whether drivers' motivations differ when trip distance and incentive type change. Subjects were therefore hired and trained to make ridesharing requests on pre-defined itineraries. The reason for using trained passengers was to reduce biases related to passenger behaviour during the trip and to help collect extra contextual information about both the trip and the driver.

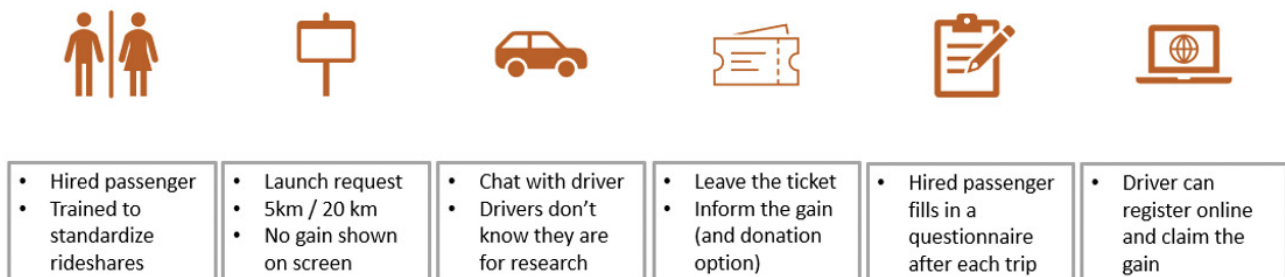


Figure 1. The design of Experiment 1

The experimental stage lasted five weeks. The first and the fifth weeks were control weeks and the three weeks in between were treatment weeks. During each week, the hired passengers requested trips of either a **very short distance (5 km)** or a **moderate distance (20 km)**. The **monetary incentive levels differed each week**, as shown in Table 1. Note that the drivers only learned the payment level after deciding to participate, when they received the ticket. In weeks 2 and 4, we also offered drivers the option of **donating their earnings to charity** rather than cashing out the money. The donation option helps to distinguish between those who do not cash out the money for practical reasons and those who do not for prosocial reasons. In total, 197 effective trips were collected, which is a significant number considering the size of the villages.

The results show that **tripling the price increases the cash out rate for moderate distance trips significantly but has no significant effect on short distance trips. Offering a donation option has a significant effect on short distance trips, no matter the payment level.** However, the donation option did not incentivize drivers of moderate distance trips to donate, regardless of the payment level. **Drivers are more willing to give up payment when the trip distance is very small.** The researcher then inferred that they have different mindsets for different trip distances: When the distance is short, they think they are doing a favour and don't need to be compensated. When the distance gets longer, they think that they are offering a more substantial service and hence have a more reasonable claim on payment.

Week	5 km gain (€)	20 km gain (€)	Donation option
Week 1 (control)	0.45	1.8	No
Week 2	1.35	5.4	No
Week 3	0.45	1.8	Yes
Week 4	1.35	5.4	Yes
Week 5 (control)	0.45	1.8	No

Table 1. Organisation of control and treatment weeks of Experiment 1

The second experiment follows up on the findings of the first, which has shown that monetary incentives work better when the trip distance is longer. This time, the question was to know how drivers react to monetary incentives, both at the participation stage and at the cashing out stage. For this experiment, the focus was on **one itinerary of 25 km. Two payment levels were randomly shown to the driver: 3€ (the baseline), and 7€ (the high-level treatment).** The experiment took place in July and August of 2017. In total, there were 128 trips collected with drivers living in nearby areas.

The experimental protocol was similar to the previous one, with three differences. First, the payment level was shown on the sign so that it was possible to test participation rate under different payment schemes. Second, the donation option was offered on all trips. Third, drivers could choose to split their earnings between their account and the charity.

The result shows that increasing the price from 3€ to 7€ does not influence how drivers behave at either the participation stage or the cashing out stage. The concern that a higher monetary incentive may self-select more money-oriented drivers is not borne out. The two payment levels attract the same driver profiles.

As a conclusion, monetary incentives work well for moderate distance ridesharing trips. However, drivers soon become insensitive to excessive incentive. The good news is that prosocial-oriented drivers continue to participate – even when monetary incentive is too high for them – as long as they are free to split their earnings with charity.

Contribution of this research to its fields and discussion making

Towards a motivation-inclusive strategy

The two experiments also provide guidance for companies and policymakers. The researcher encourages ridesharing service providers to carefully analyse their targeted users' profile, and to **design an inclusive strategy for both money-oriented and non-money-oriented drivers**. She argues that prosocial motivations may be more salient in suburban and rural contexts.

The experimental method used in the two cases could also be applied to a variety of other scenarios and to test other hypotheses. For example, in addition to distance, participation frequency may also affect the need for remuneration. Other strategies that could foster non-monetary-motivated drivers to participate, such as giving feedbacks and thank you messages to drivers who have picked up passengers, will be tested. Strategic decisions and policy orientations are sounder if they are backed up by measurable empirical evidence.

To learn more about monetary and non-monetary motivations:

Andreoni, J. (1990). Impure altruism and donations to public goods: A theory of warm-glow giving. *The Economic Journal*, 100(401), 464-477.

Benabou, R. and Tirole, J. (2003). Intrinsic and extrinsic motivation. *The Review of Economic Studies*, 70:489-520.

The two pieces of research presented in the article:

Zhu, D. (2017). More generous for small favour? Exploring the role of monetary and pro-social incentives of daily ride sharing using a field experiment in rural Île-de-France. *Communications & Strategies*, (108), 77-97.

Zhu, D. (2021), The limits of money in daily ridesharing: Evidence from a field experiment. *Revue d'Economie Industrielle*, 173, 161-202.

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