Ride-Hailing Services to Increase Urban Mobility in Egypt

Researchers:

Peter Christensen

Adam Osman

Sector(s): Gender, Labor Markets

Location: Egypt

Sample: 1,373 Uber riders

Target group: Job seekers Women and girls

Outcome of interest: Employment Empowerment

Intervention type: Subsidies Transportation

AEA RCT registration number: AEARCTR-0004966

Data: https://doi.org/10.7910/DVN/QXEODW

Partner organization(s): University of Illinois at Urbana-Champaign, Uber

Ride-hailing services such as Careem, Grab, Lyft, and Uber increase transit options in low- and middle-income country cities where many residents are underserved by public transit systems, and private vehicle ownership is costly. Researchers collaborated with Uber in Egypt to assess the impacts of expanding access to its ride services through price on the demand for ride-hailing and overall consumer mobility. Discounts of fifty percent more than quadrupled usage, and induced an increase of nearly 49 percent in total mobility.

Policy issue

In many low- and middle-income countries, high costs of car ownership combined with low levels of reliability and safety of taxi services limit the use of private transportation. Meanwhile, women often report feeling unsafe on public transportation, restricting their mobility. Prior research suggests that making transport more accessible can affect education[1], and labor[2] outcomes for women. The rise of ride-hailing services in recent years has provided people around the world with new transport options. However, higher use of ride services like Uber could exacerbate traffic congestion and emissions. To balance the need for mobility to go to school or work with the need to account for external costs like pollution, policymakers need information on how changes to the pricing of private travel affects the use of ride-hailing services and the choices individuals make between public and private transit. In partnership with Uber, researchers tested the impacts of randomly varying the price of Uber services on people's transportation choices. Can lower ride-hailing prices increase people's mobility?

Context of the evaluation

Cairo is a city of approximately twenty million inhabitants and is expected to continue growing in the coming years. As with many other cities in low- and middle-income countries, Cairo suffers from high levels of traffic congestion, underinvestment in public transit services, and high accident and harassment risk. The primary modes of travel in Cairo include private cars and taxis, private and public buses, a metro line that runs through the heart of the city, and other small transport vehicles such as private

minibuses and auto-rickshaws. Ride-hailing services are also well-established in Cairo, and Egypt is one of Uber's larger markets, reaching over four million customers since its launch in 2014. Uber frequently uses promotions and subsidies to attract both riders and drivers to its ride-hailing platform, with promotions taking the form of coupons for five to ten percent off a set of upcoming rides.

Household spending on transportation services varies by income. People with lower incomes tend to rely on low-cost options like public buses and spend around five percent of their income on transport, while people in the top twenty percent of the income distribution spend closer to ten percent. This spending pattern is explained by the large price differences between public and private options. A bus ticket or metro fare for trips up to forty kilometers costs on average 5 EGP (US$0.32) per ride, while ride-hailing and taxi services can cost 6 EGP (US$0.38) per kilometer traveled.

The study included 1,373 participants, 47 percent of whom were women. At the time of the intervention, 78 percent of participants were working, although right before the introduction of the subsidy 48 percent of participants were looking for work. Compared to the rest of the population in Cairo, the participants in this study were younger, more educated, and had a higher average income.



Women stand at a curb hailing a cab or rideshare car.

Photo credit: Rawpixel.com, Shutterstock

Details of the intervention

Researchers partnered with Uber to examine how consumers' use of Uber, and overall mobility, respond to variations in the price of Uber rides in Cairo. Between July and December 2019, participants received either discounted prices or standard fares.

To recruit participants, Uber sent text messages to a random subset of riders who had taken at least one ride in Cairo during the four weeks prior. The text message informed riders about a study on ride-hailing patterns taking place, and that participants had a chance to receive discounts on their future Uber rides. Interested participants received a link to enroll. Those who opted in were then randomly assigned to one of two groups:

1. *Large discount group (503 people):* Participants received a fifty percent reduction to the price of Uber rides.
2. *Small discount group (499 people):* Participants received a 25 percent reduction to the price of Uber rides.
3. *Comparison group (455 people):* Participants who did not benefit from the intervention continued to pay regular market prices on the Uber app.

Participants received a price adjustment on UberX (on demand individual car), UberXL (individual, but larger car), Uber Pool (rides shared with other passengers that are less expensive but may take longer to complete), Uber Scooter (rides on a two-wheeled motorcycle that are significantly cheaper than the car-based services, but potentially less comfortable), and Uber Bus (a newer, high-occupancy service provided along a changing path across certain zones of the city). Participants saw their respective discounted prices in their Uber app.

Results and policy lessons

Lowering the price of ride-hailing services increased people's use of Uber and overall consumer mobility.

Uber utilization: Reducing prices of Uber rides by 25 percent increased usage by 23.7 kilometers per person per week, a 175 percent increase relative to the comparison group who used Uber rides for an average of 13.6 km per week. A 50 percent discount increased usage by 60.8 km per week, a 447 percent increase relative to the comparison group. Breaking results down by gender, women in the 50 percent discount group traveled a total of 849 km per week more than the comparison group, while men only traveled 652 km per week more than the control group. Moreover, participants that received discounts traveled to more areas within Cairo, as well as destinations like universities, hospitals, and metro stops.

Overall consumer mobility: Accounting for additional Uber utilization is separate from overall mobility, which factors in potentially lower distance traveled due to consumers shifting away from other transportation methods in favor of cheaper Uber services. Participants experienced a net increase in overall mobility, with those receiving 50 percent discounts traveling approximately 101 km per week more than the comparison group. While differences in overall mobility between men and women were not significant, they suggest that effects are larger for women. Uber may have induced some substitution away from other modes of transportation, with the 50 percent Uber fare discount lowering the probability of taking a bus trip by 10 percentage points.

Distance traveled on private vehicles: Researchers estimated that a 50 percent reduction in the price of Uber services induced a 74 percent increase in kilometers traveled by private vehicle. Meanwhile, the proportion of trips taken by public transport declined by approximately 10 percent.

Safety perceptions: Safety concerns may account for gender disparities in the results around Uber utilization and overall consumer mobility. Prior to the intervention, women self-reported feeling more unsafe on public transit and taxis where they may face greater harassment risk than they do on ride-hailing apps. Indeed, women who received the 50 percent discount reported feeling safer than those who did not receive a discount. There was no impact on perceived safety among men.

Overall, results suggest that people traveled more when the cost of ride-hailing services fell. Benefits to cheaper ride-hailing may also be greater for groups that face safety and harassment risk on public transit, such as women. However, lowering the price of Uber also increased distance traveled on private vehicles. Higher usage of private vehicles may in turn lead to a rise in pollution

exposure. Benefits of increased mobility may be concentrated among higher-income people that use ride-hailing services.

---

1. Borker, Girija. 2021. “Safety First: Perceived Risk of Street Harassment and Educational Choices of Women.” Working Paper. Washington, DC: World Bank. https://doi.org/10.1596/1813-9450-9731.

2. Martínez, Daniel, Oscar A. Mitnik, Edgar Salgado, Lynn Scholl, and Patricia Yáñez-Pagans. 2018. “Connecting to Economic Opportunity: The Role of Public Transport in Promoting Women’s Employment in Lima.” Inter-American Development Bank. https://doi.org/10.18235/0001528.