

LIKE UBER FOR TRACTORS?

How to strengthen the rural sharing economy in India and Africa

With even basic models costing 10,000 Euro, tractors are out of reach for most smallholder farmers. However, farmers do not need to own tractors in order to benefit from them. Following the idea of the sharing economy, several start-ups have developed digital tools for tractor hire in developing countries, a trend coined “Uberization for mechanization”. This policy brief presents the concept and findings from case studies with Hello Tractor (Nigeria) and EM3 Agri-Services (India) to illustrate how this can work in developing countries.

What is the sharing economy?

The sharing economy centres on the idea to reduce the “idling capacity” of assets. Airbnb, for example, is doing this by matching empty flats with travellers. Assets can also be cars or money, time and skills, among others. The spread of personal computers and GPS equipped smartphones has greatly enhanced the potential of the sharing economy to match idle assets with people looking for such assets. The sharing economy has a peer-to-peer nature. For this, peer trust is key, as peers usually do not know each other in person. The sharing economy can reduce the need to own assets, which makes it appealing in countries where many people are too poor to buy assets. With mobile phone ownership rising in developing countries, there are high hopes that the sharing economy can help to address some of the challenges of smallholder farming.

What is “Uberization of mechanization”?

The concept follows the idea of Uber, a digital platform that matches drivers and their private cars with ride seekers. Uber itself owns no cars and employs no drivers. Uber has revolutionized the market for ride hailing by lowering the transaction costs for searching, contacting and contracting rides. Uber-type ride hailing systems is very popular in developing countries, with millions of drivers and customers.

For mechanization, Uber-type approaches were developed first by Hello Tractor in Nigeria, followed

by EM3, Trringo and farMart in India, Trotro Tractor in Ghana and Rent-to-own in Zambia, among others. While most platforms focus on tractors, “Uberization of mechanization” can be defined more generally as the use of a digital matchmaking mechanism to connect supply and demand of farm equipment.

It is important to note that Uber-type tractor hiring faces more difficult market conditions than Uber-type ride hailing: network coverage can be bad, literacy low and roads undeveloped. Moreover, there are fewer potential customers per area as farms are spatially dispersed and need services only a few times per season – mostly at the same time.

Hello Tractor (Nigeria)

Founded in 2014, Hello Tractor is an “Uberization of mechanization” pioneer. Its model centres on a monitoring device, which promises remote management of tractors, and a digital booking platform matching farmers with tractor owners, which promises to reduce the transaction costs of accessing tractors.

While the Uber analogy suggests that farmers can “tap” their phones to order tractors, the study revealed that few farmers own smartphones and yet fewer trust them to make business transactions. Thus, similar to the traditional tractor hire market, Hello Tractor has set up a network of booking agents who pool farmer’s requests for a 10% commission. This approach can benefit women since booking agents are more likely to accept requests from female farmers. However, farmers do not always trust them and travelling costs can discourage them from going to areas with limited infrastructure.

Once the booking agents pooled enough farmers, Hello Tractor pairs their request with the nearest tractor owner. However, tractor owners do not always accept the requests, for example, when coming from areas with bad roads. During service provision, the monitoring device helps owners to supervise their tractors but there are also reports of operators destroying the device.



EM3 AgriServices (India)

EM3 was founded with the aim to “uberize” agriculture. In Rajasthan, for instance, EM3 is establishing 300 custom hiring centers following a franchise model where EM3 helps to acquire customers against a 5% commission.

Similar to Hello Tractor, it was not possible for farmers to request services using a smartphone application at the time of the study. Most farmers requested services by contacting the franchisees directly - by walking-in or calling by phone. In fact, most franchisees were private contractors before and farmers and franchisee already had trusted working relationships. While there was no smartphone app for farmers yet, franchisees used an app to manage requests, tractors and operators.

Lessons learnt

“Uberization of mechanization” to facilitate the sharing of farm machinery has appeal, but in practice, the overall effects on smallholders have been mixed. In both cases, customers paid similar prices as clients who access other providers.

Key elements of the sharing economy, such as peer-to-peer exchange, are being undermined by a lack of ICT literacy and trust. Governments can help and digital pioneers need to be creative to address these gaps.

At the same time, digital sharing services have the potential to function as intermediaries to broaden the sources of hire services for smallholders. For instance, while 65% of all farmers in the study preferred to have a previous relationship with the service provider, only 15% of EM3 users emphasized this. Moreover, as each EM3 franchisee can access the machinery pool of the entire EM3 network, some types of machinery are more easily available.

Benefits for tractor owners are also mixed. For large contractors operating across agro-ecological

zones, the digital technologies can help monitor tractors and organize customers. However, individual tractor owners with longstanding customer relations may not see the benefits of using a costly app.

Overall, digital sharing approaches face the thorny challenges of rural agricultural markets. For example, while the “idling capacity” of tractors is high during many months of the year, it is low during peak seasons.

“Uberization of mechanization” is one valuable piece of the puzzle, but not the long awaited “silver bullet” for smallholder mechanization. As agriculture will never depend on software alone, policies targeted at the “hardware” – tractors that are suited to local agro-nomic conditions, financial systems that make it possible to acquire them and the human skills required to use them – are still needed.

POLICY RECOMMENDATIONS

- Offer different types of mechanization services throughout the farming season or operating across agro-ecological zones to reduce the “idle-capacity” outside of peak sessions.
- Address low ICT literacy by using visual aids in digital applications, and generate peer trust by allowing customers to rate service providers.
- In the medium term, use booking agents to facilitate usage of digital sharing services by agriculture actors.
- In the longer term, promote ICT literacy through government-led initiative to achieve the ultimate goal of peer-to-peer exchange.
- Strengthen the enabling environment by improving rural roads, building connectivity, investing in “hardware” and creating a better legal framework so that farmers can trust mobile services.

This Policy Brief is based on the study: Daum, T. et al. (2020). Uber for tractors? Opportunities and challenges of digital tools for tractor hire in India and Nigeria, Hohenheim Working Paper 001-2020. Available at www.research4agrinnovation.org

PARI is funded by the German Federal Ministry for Economic Cooperation and Development (BMZ).

PARI implementing partners: ZEF/University of Bonn, University of Hohenheim, Forum for Agricultural Research in Africa (FARA) and its national partners, African Growth and Development Policy Modeling Consortium (AGRODEP) facilitated by Academia2063 and partners in India.

IMPRINT

Center for Development Research (ZEF)
Genscherallee 3 | 53113 Bonn | Germany
E-Mail: presse.zef@uni-bonn.de
Phone: +49-(0)228 - 73 18 46
Brief prepared by Thomas Daum and Heike Baumüller
Layout: Katharina Zinn



UNIVERSITY OF
HOHENHEIM



zef
Center for
Development Research
University of Bonn