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Uber for Tractors? Opportunities and Challenges of Digital Tools for Tractor Hire in India and Nigeria

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Abstract

Agricultural mechanisation can contribute to agricultural transformation. However, there is a need to find institutional solutions allowing smallholder farmers, who play a key role in agricultural development, to access tractors even though they cannot afford their own. Hire markets hold promise for this, but tractor owners are often reluctant to provide services to smallholder farmers because of high transaction costs. To address this problem, start-ups and tractor manufacturers have developed ICT applications that aim to help smallholder farmers access tractors. This model has been coined Uber for tractors, suggesting strong similarities with the Uber service for ride hailing. Although receiving much advance praise, these models have not been rigorously analyzed. Studying Hello Tractor (Nigeria) and EM3 Agri-Services (India), this paper assesses how such models address the challenges of agricultural markets, which are characterised by spatial dispersion, the concentration of demand around peak seasons, and high transaction costs, among other problems. This paper explores the extent to which such models can help to improve tractor utilisation and access to services by smallholder farmers. The paper acknowledges the potential of ICT-based tractor hire but finds that many of the thornier challenges of agricultural markets – which urban ride-hailing markets do not face – have yet to be addressed. The paper also finds that analog solutions such as booking agents and phone calls still trump digital ones and highlights the need for a supportive environment such as building (ICT) literacy. Last, the paper suggests that the advantages of ICT-based solutions over more traditional ways of organising service markets are more mixed than commonly assumed. In brief, while the Uberisation of mechanisation has appeal, such models are not the silver bullet they are often portrayed to be. More research is needed on how to make such ICT-based efforts work, and it is important not to neglect alternative solutions.

Keywords: digital agriculture, ICT applications, smallholder farming, agricultural mechanisation, service markets, transaction costs