Extended Abstract

Discussion Paper Title	Smartphone farming – influencing factors in Ireland

Abstract prepared for presentation at the 96th Annual Conference of the Agricultural Economics Society, K U Leuven, Belgium

4th – 6th April 2022

Abstract	*200 words max*

This paper provides a baseline assessment of Irish farmer engagement with digital technologies in operating their farm businesses pre-COVID using nationally representative data from 2019. The analysis thus identifies those farmers most equipped to adapt to the changing communication and operational environment and those most vulnerable to exclusion and isolation. Farmer engagement with digital technologies will be critical to the future sustainability of agriculture and the increased need for farm-level data for policy monitoring and evaluation purposes. Farmer uptake of smartphone and computer technology will be crucial to further facilitate acceptance and uptake of precision agriculture technologies etc. Preliminary results highlight the importance of demographic factors in influencing farmer uptake of smartphones in running their farm businesses. More engaged farmers tended to operate dairy enterprises, were younger, living in younger households and with higher educational qualifications. Conversely, those farmers living alone, in the West of the country or employed off-farm were less likely to use a smartphone in conducting their farm business.

Keywords	Digital technologies, communication, social, behaviour
JEL Code	D10, Q12, Q18 see: www.aeaweb.org/jel/guide/jel.php?class=Q)

Introduction	*100 – 250 words*

Communication channels have changed rapidly since the onset of the COVID-19 pandemic across all sectors, not least amongst agricultural stakeholders. Indeed a shift to online livestock marts and virtual advisory events look set to continue. To this end, this paper investigates how well equipped Irish farmers were for this changed operating environment. The level of engagement by Irish farmers with digital technologies such as smartphones in operating their farm business is assessed using nationally representative data collected in 2019. The analysis thus identifies those farmers most equipped to adapt to the changing communication and operational environment and those most vulnerable to exclusion and isolation.

Methodology	*100 – 250 words*

A binomial logit regression model with over 700 observations is estimated to determine important farmer, household and farm characteristics that influence or hinder farmers' engagement with technology (including smartphones) in operating their farm business. The data was collected in Ireland in 2019 through a supplementary survey of the Teagasc National Farm Survey (NFS). The survey is nationally representative across farm systems and size classes and operates as part of the EU Farm Accountancy Data

Network. The data builds on previously collected data in this area and the paper includes a comprehensive descriptive analysis of technology utilisation amongst farm businesses over time.

Results	100 – 250 words

Preliminary results highlight the importance of demographic factors in influencing farmer uptake of smartphones in running their farm businesses. More engaged farmers tended to operate dairy enterprises, were younger, living in younger households and with higher educational qualifications. Conversely, those farmers living alone, in the west of the country or employed off-farm were less likely to use a smartphone in conducting their farm business. Similar drivers and barriers were found in relation to the use of computers for farm related activities. Those farmers routinely interacting with social media and the internet generally were more likely to embrace such technology for farm business related activities.

Discussion and Conclusion	100 – 250 words

This paper provides a baseline assessment of farmer engagement with digital technologies in operating their farm businesses pre-COVID. The evolution in farmer behaviour in this regard is charted through time and an evaluation of how well equipped Irish farmers are to adapt to a changed operating environment made. Farmer engagement with digital technologies will be critical to the future sustainability of agriculture and the increased need for farm-level data for policy monitoring and evaluation purposes. This paper identifies key farmer, household and farm characteristics to inform how best to engage with farmers in this regard. Farmer uptake of smartphone and computer technology will be crucial to further facilitate acceptance and uptake of precision agriculture technologies etc.