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Author(s)	Banovic, Marija; Renwick, Alan; Keane, Mark T.; Bogue, Pat
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The Field: Land mobility measures seen through the eyes of Irish farmers

Marija Banovic¹, Alan Renwick¹, Mark Keane² & Pat Bogue³

¹School of Agriculture & Food Science, University College Dublin, Belfield, Dublin 4, Ireland

²School of Computer Science & Informatics, University College Dublin, Belfield, Dublin 4, Ireland

³Broadmore Research, Ennis, Ireland

Abstract

This paper examines the overriding importance of land mobility measures in the Irish agricultural sector, as seen by Irish farmers. We use a neural network model to relate key properties of farmers to their response choices using data from a survey study. The model captures the co-dependencies and constraints between factors of interest, based on socio-demographic, economic and behavioural characteristics of the farmers in the study. Results show that on average a farmer's personal, behavioural characteristics and traditional views on land transfer influence their perceptions of various land mobility measures. However, even though farmers suggest a variety of solutions to the land mobility problem they still question whether these solutions would actually "work". The model highlights the need for a more dynamic approach to land mobility issue, one that invests more time on understanding in traditional views on land transfer.

Introduction

"Land is all that matters, Tadhg boy, own your own land." - John B. Keane, The Field

Land has always been one of the most important and also controversial assets in Ireland and land mobility continues to be a critical problem hampering the future development of the Irish agricultural sector. Transfer of land from generation to generation, or from farmer to farmer, is an extremely sensitive and complex matter depending on a mix of economic, social and psychological factors. As a consequence, land is slow to change hands and the Irish agricultural sector is marked by low land-mobility and a late transfer patterns involving small farms and an aging farming population. As Ireland has ambitions to significantly grow its agri-food sector, such growth targets will depend, in part, on the smooth transfer of land from older, retiring farmers to younger farmers.

In the past, government have employed a range of policies and schemes to improve land mobility situation; however up to now they appear not to have had the desired effect. The overall objective of this study is to develop a deep understanding of the present situation and how potential measures that could improve land mobility in the Irish agricultural sector as seen through the eyes of the Irish farmer (supported by modelling survey data).

Method

The data used in this study comes from a survey conducted in 2012 on the random sample of 421 Irish farmers to determine their future plans related to land transfer, farming and land ownership (Bogue, 2012). A subset of 201 farmers was used to better understand farmers' perceptions on potential measures for land mobility. Collected data were analysed by using Interactive Activation and Competition (IAC) neural network (McClelland, 2014; McClelland & Rumelhart, 1988). IAC models are useful for showing the supporting and competing constraints between different factors in a problem domain and can reveal generalisations over data sets describing individuals. Here the model was applied to farmers' perceptions, their properties (e.g., location, age, sex), and land mobility measures. An IAC network consists of a collection of nodes representing features of interest (e.g., farmer age, sex, location, farmer perception that a mobility will reduce tax) and excitatory links between these nodes indicating that these features are related in a particular case (i.e., the properties/responses of a particular farmer in the survey). Nodes are also organized into pools, indicating that these feature-nodes are mutually exclusive with inhibitory links between them (e.g., the sex pool has two mutually exclusive nodes, male vs female). As such, the network as a whole represents the properties and response choices of the farmers in the study and the co-dependencies and constraints between these factors. If one sets the activation of one feature-node (e.g., a land transfer option) to a high level (i.e., clamp it) and propagates activation through the network, a generalisation of the overall dependencies and constraints linked to this feature can be found by reading the activation levels in other nodes, when the network settles.

Results

The results show that farmers' perceptions of land mobility are affected by a complex interaction of factors mainly related to the farmer's personal and behavioural characteristics, like age group and importance of family, coupled with their visions on different approaches to improving land mobility related to, for example, leasing and partnerships. On the other hand, the traditional view that these measures just "won't work" in Ireland contradicts their perceptions and stands out in the network. Figure 1 shows the network associated with just two proposed measures to improve land mobility (i) a reduction of costs and taxes and (ii) provision of general incentives, as perceived by the farmers in the survey.

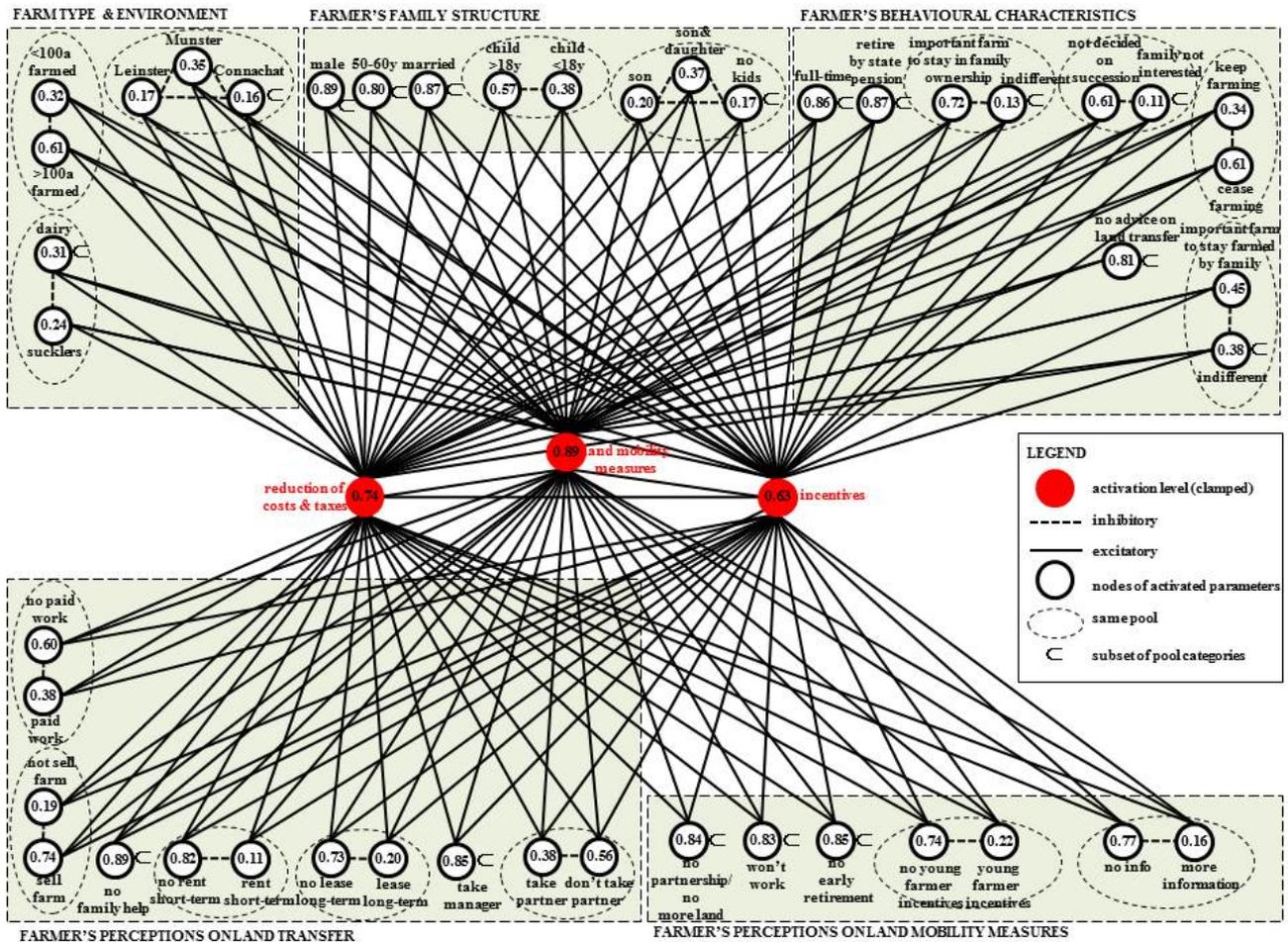


Figure 1. Network of farmers' perceptions of potential solutions for encouraging land mobility.

Conclusion

Previous land mobility measures and changes in the agricultural sector have not been as successful as expected and there is an imperative to start from the root of the problem and turn to the farmer's vision? In this study we have addressed the land mobility measures as perceived by the Irish farmers that could help nurture change in Irish agricultural sector. The benefits of applying some of the farmer's on views on land mobility could be the creation of better social and economic conditions to encourage elderly farmers who wish to decrease or cease and retire from their activity, as well as for young farmers who desire more land to improve their viability. But, implementation of these measures, like reduction of transfer costs and other taxation and incentive schemes, should be a part of a larger network and policy change with a deeper focus on the farmer. A more dynamic and coherent approach that invests in the farmers' traditional values and views on land mobility is needed to be able to encourage leasing, partnerships, early land transfer, and encompass long term horizon.

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