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Farmers' Motivations When Adopting Low-Emission Technology

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Introduction

In the Republic of Ireland, farmers use Low Emission Slurry Spreading (LESS) voluntarily or to comply with regulations under the Nitrates Directive. The adoption rate is higher when farmers participate in group discussions. This study examines 1) Characteristics of the farmers voluntarily adopting LESS and 2) Motivations to participate in a scheme and group discussions.



Data

The data is from the Teagasc 2021 National Farm Survey, operated as part of the EU Farm Accountancy Data Network. Respondents were asked to rank 8 statements around their motivation to adopt farming technologies that reduce ammonia emissions. N= 634

Methodology

Principle Component Analysis was used to identify underlying constructs that explain most of the variability in motivations. Two factors (Technology and Morals) emerged. Logit models were estimated to profile the farmers voluntarily adopting LESS, farmers operating under nitrates derogation who are mandated to use LESS and farmers who are part of a discussion group who are more likely to be LESS adopters.

Results

Voluntary Adoption of LESS

Variable	B
Farm Manger's Age	0.005
Market Orientation	0.004***
Ammonia Emission (Per Ha)	0.026***
Land area (Ha)	0.005*
Agricultural Education	0.834***
Discussion Group Member	0.079

Discussion Group Participation

Variable	B
Farm Manger's Age	-0.008
Technology factor score	-0.039
Moral values factor score	0.231*
Innovativeness	0.512***
Ammonia Emission (Per Ha)	0.04***
Land area (Ha)	0.009***
Agricultural Education	0.830***

Nitrates Derogation Scheme (170Kg/Ha)

Variable	B
Farm Manger's Age	-0.026*
Technology factor score	0.552***
Moral values factor score	0.027
Off farm job farmer	-1.870***
Labour Units (Per Ha)	25.432***
Land area (Ha)	0.019*
Agricultural Education	0.342
Discussion Group Member	1.415***

*** p<0.0001, ** p<0.001 *p<0.05

Conclusion

Farmers motivated by “technology” motives were more likely to farm under a Nitrates Derogation and be required to adopt LESS on foot of regulation. Whereas farmers motivated by “moral” statements were more likely to be part of a discussion group. Farmers with agricultural education and market-oriented were more likely to adopt LESS voluntarily.

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