

Title: the impact of busy road frontage on the adoption of good management practices – an analysis of New Zealand farmers

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Abstract: New Zealand's agricultural industry faces the challenge of maintaining its contribution to the tradable economy under increasing public scrutiny. In particular, public scrutiny makes it hard for primary industry to maintain its 'social license to operate' (SLO), i.e. the informal approval or acceptance communities grant to a business or industry. Adopting good management practices (GMPs) to meet societal expectations of environmental and social performance of farming is central to obtaining SLO.

Yet what if GMPs are unobservable or otherwise hidden from the public eye? Do farmers feel the same pressure to pursue GMPs? To date, studies on the relationships between road frontage and SLO have been restricted to qualitative analysis, and to our best knowledge, none have focused on farmers' adoption of GMPs.

Therefore, we use the 2019 Survey of Rural Decision Makers Data, a large-scale survey of farmers, foresters, and growers from across New Zealand (we only consider sheep and beef and dairy farms in this study), to analyse the effects of farms being situated on busy roads on the adoption of GMPs. We employ principle component analysis on 51 GMPs to reduce the dimension to 10 components while still explaining 99% of the variance in the data. Based on the component scores, we use k-means cluster analysis to determine the best number of farm clusters, which is 7 in our case. The clusters are then used as outcome variables in a multinomial regression model to analyse the causal effects of busy road frontage on adoption of GMPs, considering different farm and farmer characteristics (e.g., type of farm, education, ownership, and profitability).

The regression results show, compared to the group of farms that have high adoption of almost all GMPs, those farm groups only focusing on one or two types of GMPs (e.g. fertiliser management) are less likely to be in front of busy roads. The findings of the study indicate that being observable to the public (farms fronting a busy road) stimulates the adoption of GMPs.