

Annex 1 – Extended abstract for Contributed Paper session

Paper Title	Farmer attitudes predictive of farm profitability
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Contributed Paper abstract prepared for presentation at the 91st Annual Conference of the Agricultural Economics Society, Royal Dublin Society in Dublin, Ireland

24 - 26 April 2016

Abstract	200 words max
<p>How manager attitudes, personality and behaviour influence farm performance is at best only partially understood. The study reported here expands this understanding by analysing such attributes of eighty dairy farmers in Great Britain. Business goals, temperament, purchasing behaviour and growth mindset are found to be associated with profitability. Responses to six question predicted 40% of profitability variation in a linear model. These results represent a major step forward in explaining how farm managers' attributes influence farm business profitability and highlight potential areas to improve farm profitability.</p>	
Keywords	Farm management, profitability, attitudes, beliefs
JEL Code	Q1 see: www.aeaweb.org/jel/guide/jel.php?class=Q)
Introduction	100 – 250 words
<p>Farm management research is dominated by policy, technology adoption and efficiency analysis. After accounting for these, one might assume that the farmer is just an ancillary consideration with regards to explaining variation in farm performance. However, this paper contends that the farmer is not a minor consideration but is, in fact, the most important variable.</p> <p>In other sectors, a great deal is known about how individuals' attributes predict success. In particular, personality and general cognitive ability have been identified as major drivers of job performance. Though this knowledge may not fully translate onto farm, it should still be broadly applicable.</p> <p>A comprehensive literature review identified the likely predictors of profitability as: goals; personality; beliefs; attitudes; practices; and management background. The reported study helps clarify the importance of attitudes in particular using a questionnaire completed by eighty dairy farmers and associated farm management accounts over a three-year period. A linear model is presented predicting variation in profitability.</p>	
Methodology	100 – 250 words
<p>Farm management style, staff management practices, goals and objectives and biographical information were assessed in an 83-item questionnaire. The questionnaire was posted to 234 Promar International clients in Great Britain and 101 responses resulted (43% response rate). Due to incompleteness and an outlier, 21 of</p>	

these were discounted leaving a final sample of 80.

Profit Before Resource Costs (PBRC) does not include costs such as rent or finance. Manager performance is unlikely to have a large impact on these costs in the short-term making PBRC a suitable measure of manager performance. Adjusting for unpaid family labour and size, PBRC was also calculated without wages and divided by turnover. Four variations of PBRC adjusting for different biases were thus created. PBRC, PBRC + wages, PBRC / turnover, and (PBRC + wages) / Turnover.

Principal Component Analysis was performed on these four variations of PBRC. The main component identified was used as the dependent variable, henceforth referred to as profitability. This was deemed to be a relatively unbiased measure of farm performance directly attributable to the farm manager. Exploratory correlation analysis was performed identifying 21 statistically significant correlations with profitability. A linear model was then developed to explain variation in farm profitability.

Results *100 – 250 words*

Table 1 Linear model predicting variation in profitability ($R^2 = 0.40$, Adj = 0.35).

Variable		Co-efficient	Std. Error	T - value	p - Value
Intercept		-0.14	0.51	-0.28	0.78
My farm is completely orientated towards maximising profit	0.31	0.32	0.09	-3.36	0.00
How much insight into farm management did you gain between the ages of 11 & 15	-0.26	-0.19	0.07	2.85	0.01
When things go wrong I sometimes lose my cool and don't salvage the situation as well as possible	-0.26	-0.20	0.07	2.71	0.01
Staff entering the industry lack important skills and knowledge	0.25	0.22	0.09	-2.64	0.01
Content cows are a major source of pride	-0.24	-0.32	0.13	2.51	0.01
I buy in bulk when possible to get the best prices	0.18	0.18	0.09	-2.00	0.05

Six variables predicative of farm profitability were included in a linear model presented in Table 1. The variables found to predict profitability can be summarised under three themes;

- Ñ Profit a priority - actively managing with this in mind;
- Ñ Growth mindset - beliefs about their own and staff development; and,
- Ñ Personality - Emotional stability, content cows and pride, and Detail Conscious purchasing behaviour

Discussion and Conclusion**100 – 250 words**

The study reported here has advanced the understanding of variation in farm performance. Farmer attitudes and motivations have been identified as critically important. The model explained 40% variation in financial performance. This was more than satisfactory from such a parsimonious model. Significant potential to improve the profitability of farm businesses by managing farmer attributes is implied by the large proportion of variation explain by just these six variables. Farmers interested in improving their performance are likely to benefit from considering the six model variables to see if their own attitudes can be altered to ones predictive of higher profitability.

Profit focus, emotional stability, conscientiousness and a growth mindset in particular have been highlighted as important. These are all amenable to change with appropriate effort by farmers and support from relevant stakeholders. Large improvements to farm business performance are possible through candidate manager selection and development of *in situ* farmers cognisant of these findings.

Weaknesses of the current study reported here include that the sample was not especially representative and that intelligence and personality was not assessed. An even greater proportion of variation is likely to be explainable with a more comprehensive study. A rationale for further research is argued for to address the gaps in the extant literature.