

# Rational Inefficiency in Pig Farming

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## BACKGROUND

Technical inefficiency is regarded as waste, and it is mainly linked to the lack of experience and knowledge of the decision-maker. However, this view has been contested on the basis that fluctuation in efficiency might be related to aspects not considered in the analysis. Bogetoft & Hougaard (2003) extend the idea further by introducing the notion of rational inefficiency. The explanation put forward by the authors is that inefficiency levels could be the consequence of rational production decisions.

## OBJECTIVE

this paper aims to investigate whether water use may explain some of the observed technical inefficiency in Catalan pig farming.

## METHODOLOGY

$$y_i = f(x_i; \beta) + v_i - u_i$$

## DATA

We rely on cross-sectional farm-level production data for a set of 523 specialist Catalan pig farms for the year 2018.

## RESULTS

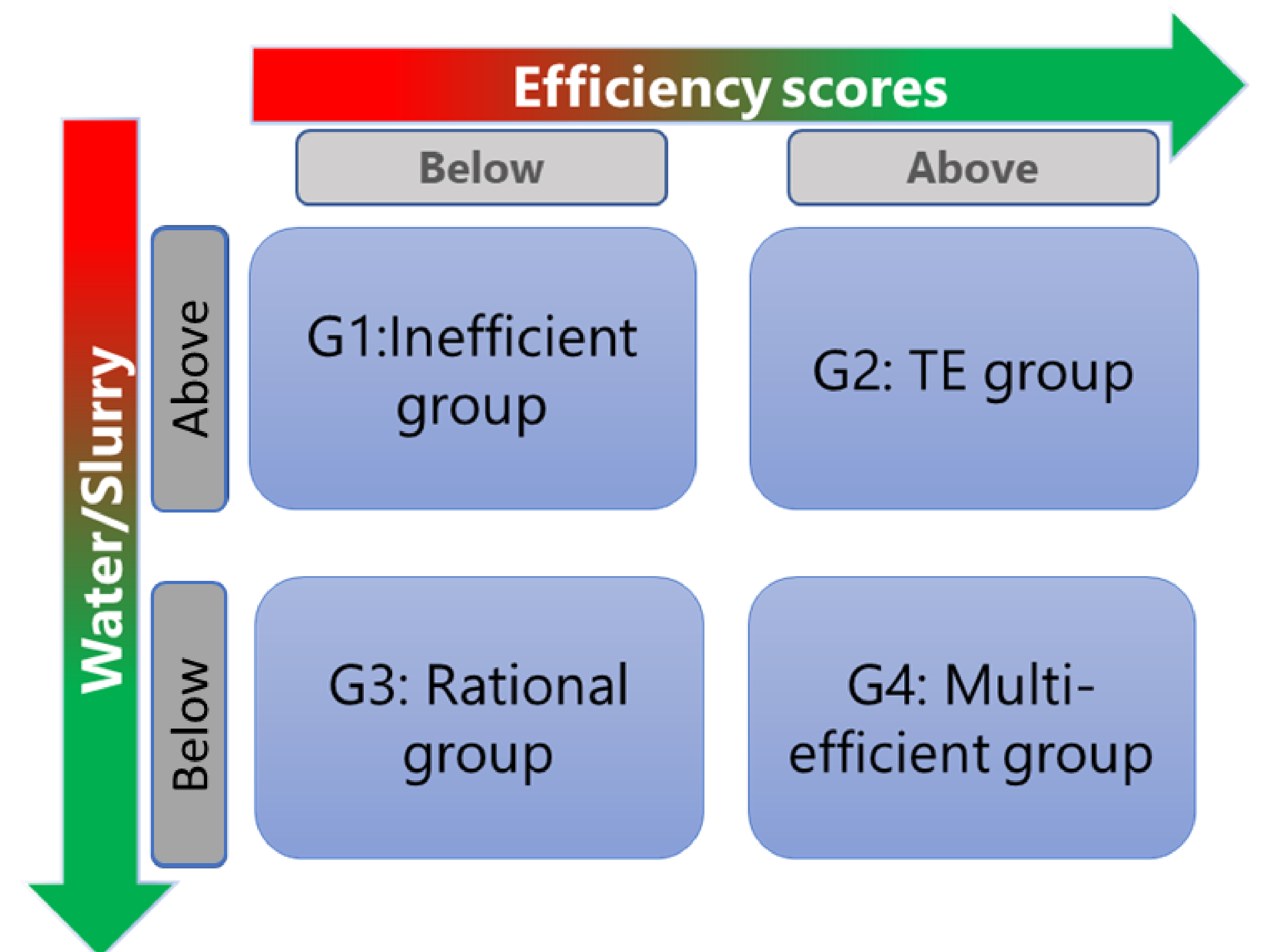
- The average technical efficiency score is 0.942 with more than a third of the farms having an efficiency score greater than 0.950.
- Based on the median value of the water used per output produced (water/output) and slurry released per output produced (slurry/output), and the efficiency scores, the farms are classified into four groups (Figure 1).
- Results indicate that neither the technical efficiency scores nor the water or slurry to output ratios are determinant factors that affect the independence between the groups (Table 1)

**Table 1.** Number of farms across the four groups and the results of the Chi-square test.

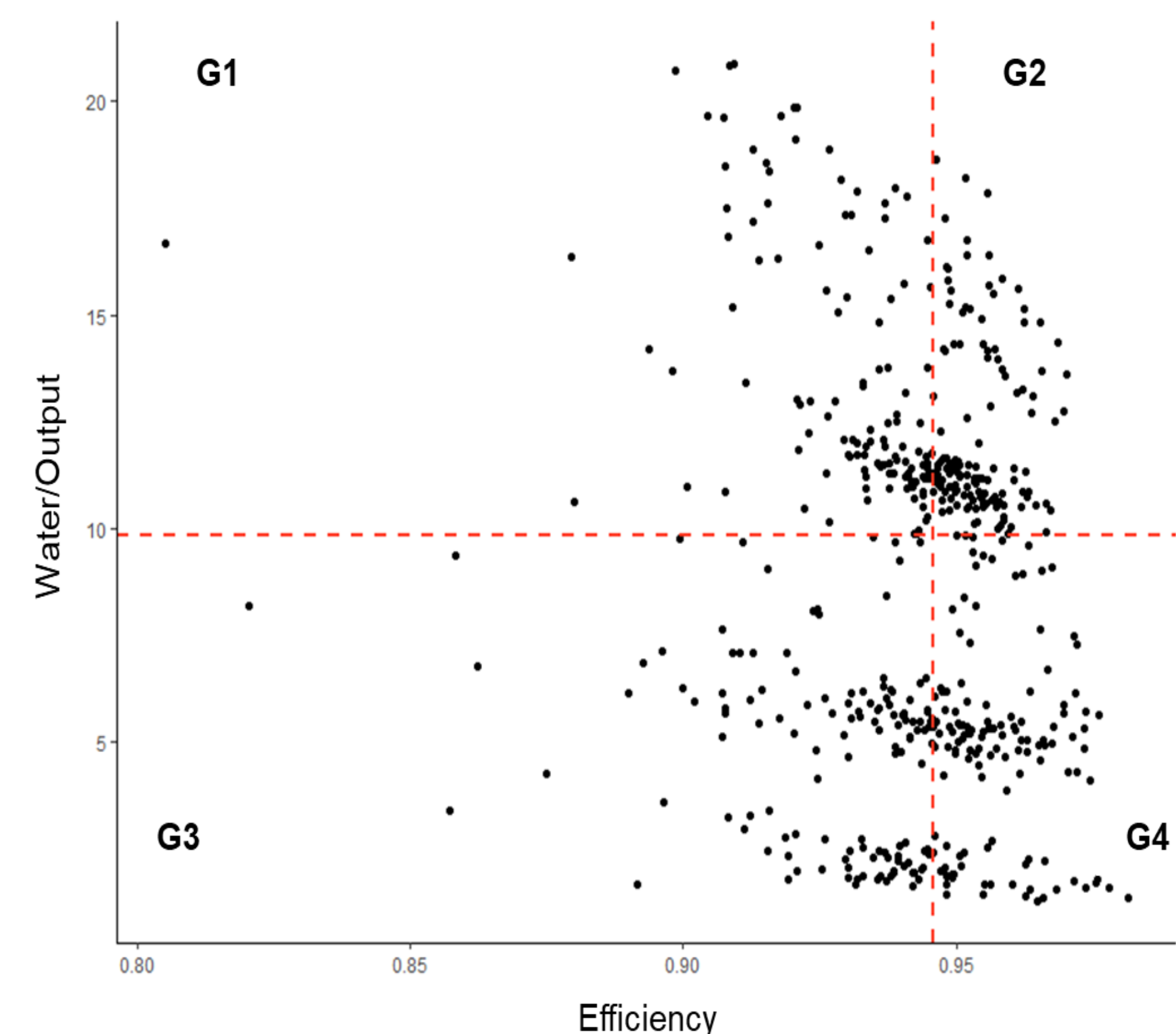
		Technical efficiency				Technical efficiency	
		below	above			below	above
Water	above	128	133	Slurry	above	124	124
	below	131	133		below	138	137
Pearson Chi-square		0.017		Pearson Chi-square		1.195	
p-value		0.895		p-value		0.274	

## CONCLUSION

- The findings support rational inefficiency in a nuanced way..
- This theory holds when comparing the farms located in the rational inefficient group (G3) to the technically efficient group (G2)
- However, between G3 and the multi-efficient group (G4), there is a bit less clear evidence of the rational inefficiency.



**Figure 1.** Distribution of pig farms into groups according to efficiency and water/slurry values



**Figure 2.** Scatter plot matrix describing the relationship between water use and efficiency scores. (The red dashed lines indicate the median of both indicators)

## REFERENCE

Bogetoft, P., & Hougaard, J. L. (2003). Rational Inefficiencies. *Journal of Productivity Analysis* 20(3), 243–271.