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IMPORTANCE-PERFORMANCE ANALYSIS OF ORGANIC SHEEP AND GOAT FARMERS: A STUDY IN SIX EUROPEAN COUNTRIES

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Abstract: The aim of this paper is to analyse the performance of organic sheep and goat farms through a set of indicators of multi-dimensional sustainability (MDS) classified in four categories: Financial, Innovation, Market and Resources. Data refer to 42 organic farms across six European countries and consider meat, dairy and dual purpose farms. Farm performance and the respective importance paid for each MDS indicator are analyzed through Importance-Performance Analysis (IPA). Results show a differentiated situation both in terms of farm types and of MDS indicators: Financial aspects show the worst performance, while Market aspects the best ones. Resources are scored positively for Goats and Dairy farms, while Innovation is generally considered as not relevant for most of farm types.

Introduction: Small ruminants represent just a small share of the total EU livestock output in terms of added value. In the last two decades, the EU sheep and goat sector has experienced economic and structural difficulties, which has led to a consistent decrease in the number of heads. Sheep and goats are often reared in marginal and economically vulnerable areas, where they are an essential part of the agro-ecosystems and play a special role in the provision of ecosystem services to society. The aim of this study was to gather insights into factors that are most likely to constrain or favour the development and the multidimensional sustainability of the sheep and goat production sector, taking into consideration a set of MDS indicators. These indicators were selected to measure the four performance dimensions of the Balanced Scorecard concept, as developed by Kaplan and Norton (1992). We collected data on multiple case-study organic sheep and goat farms in six EU countries: ES, FI, FR, IT, GR, UK. Dairy, meat production and dual purpose production farms (i.e. both dairy and meat) are taken into consideration. A participatory, multidimensional perspective has informed the entire study, from data collection to analysis.

Material and methods: Interviews for the farmers' survey were conducted with 42 organic sheep and goat farms in six countries: FI, FR, GR, IT, ES, UK. All farm types have been considered: meat, milk and dual-purpose farms. Data collection concerned an evaluation of a set of indicators defined in the context of a simplified balanced score card approach (Kaplan and Norton, 1992). In particular a set of indicators was developed to allow for a subjective

multidimensional measurement evaluation of the social and economic sustainability of the sheep and goat farms. We refer to these indicators as multidimensional-sustainable (MDS) indicators. Farmers were asked to rate their performance over the last five year for each indicator, on the basis of their own knowledge of their own farm performance with respect to the average industry performance. All answers were on a 7-point Likert scale, running from 1 (worst in sector) to 7 (best in sector). Farmers were also asked to assess the level of importance of the same set indicators for their current business, using a 5-point Likert scale scoring from 1 (unimportant) to 5 (very important). The indicators were validated for readability, clarity and content validity through personal interviews with experts.

Using Importance-Performance Analysis (IPA) on the MDS indicators we looked for differences between farm types. IPA was originally proposed by Martilla and James (1977). It was then widely applied in a wide range of sectors due to the simplicity of the method and the effectiveness of the interpretation of results (see Sever, 2015, among others). IPA compares measures of importance and performance for a set of indicators in a two-dimensional space. Measures of performance and importance are usually defined by Likert scales. Importance and performance must be measured for the same set of indicators, which allows for a direct pairwise comparison of importance and performance scores. Results of matching are classified referring to a crossing point, such as the scale mean, the sample mean or the sample median. The choice of the type of crossing point is not neutral for the interpretation of the results. For a detailed description of the issues related to the selection of different types of crossing point, see Sever (2015).

IPA allows to classify each indicator in four categories, defined as follows:

- “Keep oN” (KN) refers to indicators with both importance (I) and performance (P) > than the respective cross points (CP). This category therefore identifies areas where good practices should be maintained;
- “Concentrate here” (CH) refers to indicators with I> CP and P
- “Over performance” (OP) refers to indicators with ICP. This category indicates an over-performance of indicators, given their limited importance and identifies areas where we can look for resources to be redistributed;
- “Low priority” (LP) refers to indicators with I

Results: This paper only reports IPA results based on crossing points defined as sample means. Figure 1 shows a graphical synthesis of the IPA for the whole organic sheep and goat group of farms. Table 1 show the results for five different groupings based on two criteria: production purpose (dual purpose; specialised meat; specialised dairy), and species (goats; sheep). For what concerns financial performance, while the price paid on sales is classified as KN for all the subsamples, the farmers’ share of retail price is always considered a critical area and classified as CH. Learning and growth (innovation) is considered of secondary importance across almost all farm types. However, process innovation is considered critical (CH) for goat farms, while marketing and product innovation are critical factors for meat farms. The performance of market indicators is always higher than importance for all subsamples and indicators, with *market knowledge*classified as OP for goats, dual purpose and dairy farms. In the area of Internal Business Process the results are less straightforward. Labour force skills and cooperation with other farmers show positive results in terms of performance for all the subsamples except for dual purpose farms. However, the importance paid to cooperation with other farmers is not considered as particularly relevant for most of the farm types. Critical areas are shown for the variable *farmers’ quality of life*in particular, with the exception of Goat farms that is classified as KN. The availability of land for pasture or feed crops has extreme scores: KN for Goats, Dairy and Meat production farms, and CH for dual purpose and Sheep production farms. Goats and Dairy production farms in general show the best results for what concerns the Resources MDS indicators. On the contrary, dual purpose farms show a critical situation for land availability and animal housing in particular.

Table 1: IPA classification of MDS indicators per farm types by MDS indicators

		Goat farms	Sheep farms	Dual Purpose farms	Dairy farms	Meat farms
Financial performance	Prices paid on sales	KN	KN	KN	KN	KN
	Farmer's share of the retail price	CH	CH	CH	CH	CH
	Sales growth	OP	LP	LP	LP	CH
	Gross margins	LP	KN	CH	LP	CH
	Percentage of turnover reinvested on-farm	OP	LP	LP	OP	LP
Learning & growth (innovation)	Product innovation	LP	LP	OP	LP	CH
	Process innovation	CH	LP	LP	LP	LP
	Marketing innovation	LP	LP	KN	LP	CH
Customer/Market	Product quality	KN	KN	KN	KN	KN
	Level of market knowledge	OP	KN	OP	OP	KN
	Customer satisfaction	KN	KN	KN	KN	KN
Internal Business Process	Labour force skills	KN	KN	LP	KN	KN
	Farmer's quality of life	KN	CH	LP	CH	CH
	Cooperation with other farmers	OP	OP	OP	KN	OP
	Quality of veterinary services	LP	LP	KN	LP	LP
	Quality of advisory services	LP	LP	LP	LP	OP
	Availability of land for pastures/ feed crops	KN	CH	CH	KN	KN
	Availability of animal housing	KN	LP	CH	OP	OP
	Quality of animal housing	LP	OP	CH	OP	LP

KN: Keep oN; CH: Concentrate Here; LP: Secondary Importance; OP: OverPerform.

Discussion: The generally positive context of the market in terms of customer satisfaction and quality of the products is reflected in adequate price paid on sales, which however, is not proportionally distributed to farmers. Given the low importance paid by farmers to innovation, they do not invest sufficient resources and managerial resources for a long term development of the business. This situation may represent a major obstacle for the development of the sector. In fact, small enterprises in general, and farms in particular have limited access to external financial sources and should rely more on own resources for supporting investments and innovation processes. The low importance attributed by farmers to the quality of the advisory services seems to support the idea that more efforts are needed in order to stimulate farmers to adopt a more active management that could lead to fair prices and ultimately to more sustainable sector.

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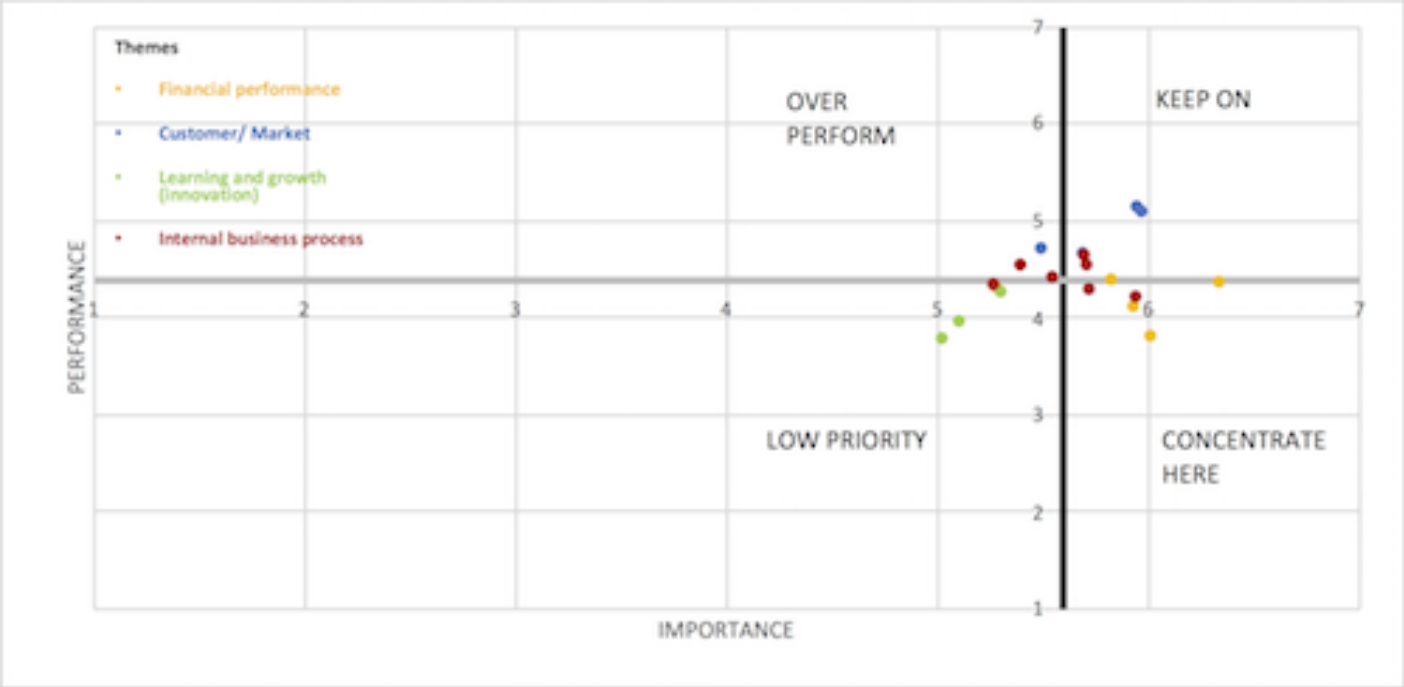
Sever, I. 2015. Imp.-performance analysis: a valid management tool? Tourism management, 48, 43-53. http://dx.doi.org/10.1016/j.tourman.2014.10.022.

Image 2:



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