



The impact of sheep farm production orientation in Bulgaria and the region on the adoption rate of precision livestock farming sensors and devices

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Abstract

The aim of this study is to examine the influence of the production orientation of sheep farms in Bulgaria and the region on the intensity of digital transformation. The study encompasses 270 sheep farm owners, with data collected via face-to-face direct standardized interviews. The questionnaire itemized a total of 10 electronic devices and sensors, with farmers indicating which technologies were implemented in their farms and to what extent. To facilitate the analysis, the numerous individual configurations were categorized into the following adoption classes: 1 (one device), 2–3 devices, and 4 or more devices and sensors. The results demonstrate that production orientation is a key driver of the number of implemented technologies. The highest level of innovation is observed in dual-purpose (combined) farms, where 53.85% of farmers utilize four or more technical devices. The dairy sector is the most widespread, accounting for 48.15% of the surveyed farms; however, its modernization is highly specialized and primarily focused on the milking process. In contrast, meat-oriented farms rely more heavily on remote monitoring systems, a choice dictated by their pasture-based management system.

Keywords: *production orientation, digital transformation, precision sheep farming, technology adoption, PLF*

