

POSTER

Technical Session 14

Beef Cattle – Genetic Evaluation and Recording

Drivers of Mobile App Adoption in Extensive Beef Cattle Farms: preliminary results

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Digitalisation is increasingly recognised as essential for improving efficiency, traceability, and sustainability in extensive cattle production systems. Mobile herd management applications offer practical tools for reproductive control, health monitoring, and on-farm decision-making. However, adoption rates remain limited, especially in low-input, pasture-based production systems in Spain, suggesting that behavioural factors play a decisive role in shaping farmers' willingness to adopt these technologies.

This study analyses the intention of low-input cattle farmers to adopt mobile livestock management applications using Partial Least Squares Structural Equation Modelling (PLS-SEM), grounded in the Technology Acceptance Model (TAM). The conceptual framework incorporates perceived ease of use, perceived usefulness, attitude towards technology, and behavioural intention to adopt. A structured questionnaire was administered to farmers operating under extensive conditions. PLS-SEM was employed due to its suitability for predictive research models involving latent constructs and complex interrelationships. The reliability and validity of the measurement model were assessed through factor loadings, composite reliability, and average variance extracted, while structural relationships were evaluated using bootstrapping procedures. The results indicate that farmers' intention to adopt mobile livestock management applications is primarily driven by perceived ease of use ($\beta = 0.715$), with the model explaining a substantial proportion of variance in behavioural intention ($R^2 = 0.870$). Perceived usefulness did not exert a direct effect on intention; however, it had an indirect effect through its positive influence on perceived ease of use ($\beta = 0.465$). Farming experience played only a marginal role, showing a negligible direct association with intention ($\beta = 0.037$) and a slight negative relationship with perceived ease of use ($\beta = -0.098$). Socio-economic characteristics (age, proportion of income derived from livestock, farm size, and prior knowledge of digital technologies) were also included as control variables. Overall, the findings suggest that accelerating digital adoption in Spanish low-input, pasture-based cattle systems requires intuitive, user-friendly, and practice-oriented applications, supported by targeted advisory services and structured training strategies.