Regional Dynamics in Agricultural Farm Survival: A Longitudinal Study of France and Pays de la Loire

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In 2020, metropolitan France had only 389,800 remaining agricultural farms, approximately 270,000 fewer than in 2000. This decline has disproportionately affected farms specializing in dairy and/or beef production compared to those focused on plant production. This study investigates the factors influencing the cessation of agricultural farms in metropolitan France, with a particular emphasis on the Pays de la Loire region—an area known for its agricultural diversity but also facing unique challenges. Understanding the determinants of farm survival requires a robust analytical framework based on original, high-quality longitudinal data.

To achieve this, we utilize unique datasets obtained through secure access to individual farm records from the French agricultural censuses of 2000, 2010, and 2020, complemented by data from the agricultural social security system (MSA). The integration of these data sources enables precise tracking of both farm cessations and farmer mobility over time. Unlike traditional cross-sectional analyses, this longitudinal approach provides a more accurate assessment of the factors influencing farm survival and structural changes in the agricultural sector. By leveraging this innovative, data-driven methodology, we aim to identify key economic, structural, and policy-related factors contributing to farm resilience, offering valuable insights for researchers and policymakers.

For this analysis, we employ the Cox regression model, which is particularly well-suited for examining time-to-event data while accounting for covariates that may influence the risk of farm cessation. The model's semi-parametric nature allows for the estimation of hazard ratios, quantifying the relative risk associated with specific variables. Factors such as farm size, legal status, and modernization efforts are assessed for their impact on survival probabilities.

Farms in the Pays de la Loire region face a significantly higher risk of cessation compared to those in other regions. This elevated risk may result from region-specific challenges, including market saturation, environmental constraints, and policy frameworks that may disadvantage certain types of farming operations. Within the region, farm survival rates vary by department, with farms in Maine-et-Loire exhibiting a slightly lower risk, while those in Mayenne, Sarthe, and Vendée show minor variations in risk.

These findings highlight the need for region-specific interventions to enhance farm sustainability. Policymakers should consider implementing financial aid programs for at-risk farms, establishing regional advisory services focused on resilience strategies, and promoting market diversification initiatives to reduce dependency on volatile agricultural sectors.