

Turnover events of animal caretakers and productivity in Ohio swine farms

Nicholas J. Black, Andreia G. Arruda

Department of Veterinary Preventive Medicine, The Ohio State University, Columbus, OH.

Key Points:

- The US swine industry faces critical labor supply issues and is plagued by high rates of employee turnover.
- This study investigated the association between employee turnover and productivity using a sample of eleven farrow-to-wean farms in Ohio.
- There was a considerable amount of variability in the turnover rate for the year among the participating farms.
- The occurrence of an involuntary turnover event (employee was terminated) was significantly associated with improvements in monthly number of pigs weaned per sow and pre-weaning mortality 2-months after the event.

Employee turnover among United States (US) swine farms is a major concern the industry currently faces, with turnover rates among animal caretakers reported to be between 20 and 35%, depending on farm size and geographical region¹. Turnover can be costly and may have an impact on subsequent herd productivity and overall animal health.

We conducted a study to:

- (1) Describe the amount of employee turnover events that occur in a single year.
- (2) Investigate the association between employee turnover and two subsequent production parameters: number of pigs weaned per sow & pre-weaning mortality

Employee Turnover: was divided into:

- *Voluntary Turnover*: employee decided to leave or quit, and
- *Involuntary Turnover*: employee was terminated by company decision

Eleven farrow-to-wean farms belonging to two separate production systems (referred here as systems 1 and 2) in the state of Ohio were enrolled and monthly human resources and production records were captured for each farm for the year of 2019. Statistical models were built to test associations between the occurrence of turnover events in a given month and the two production outcomes of interest: monthly number of pigs weaned per sow (PWS) and pre-weaning mortality (PWM).

There were a total of 152 turnover events for all farms over the year of 2019, with 4 and 148 turnover events in systems 1 and 2, respectively.

The average turnover, calculated as a percent of total turnover (employees leaving the farm either voluntarily or involuntarily) among full time employee positions was 92% (SD = 62%; Range = 8% - 217%).

Improvements in both productivity measures (increase of 3 pigs weaned per every 4 sows ($p = 0.01$) and decrease of 1.15% in monthly PWM ($p = 0.02$)) were significantly associated with the occurrence of an involuntary turnover event 2-months prior, after controlling for season, previous month production, farm, and system. This association coincides with findings of a study² that demonstrated a relatively immediate (months) association between employee turnover and unit-level efficiency, which mediated a more long-term (years) association to organizational performance. Interestingly, for number of pigs weaned per sow, there was a significant interaction between an involuntary turnover event 2-months prior and monthly county-level unemployment rate ($p = 0.02$). This indicated that improvements in number of pigs weaned per sow were profound at the lowest levels of county-level unemployment rate but diminished at the highest levels. This association could reflect the effect that the local labor market has on the farm's ability to find a quality replacement following the termination of former employee

This study is one of few to assess employee turnover among swine farms in the US and investigate their impact on subsequent production. There was considerable variability in the 2019 turnover rate among the participating farms. However, with a mean rate of 92% and a maximum of 217%, this study illuminated the high amount of turnover that farrow-to-wean farms may face.

References:

¹Boessen, C., Artz, G., Schulz, L., 2018. A BASELINE STUDY OF LABOR ISSUES AND TRENDS IN U.S. PORK PRODUCTION. National Pork Producers Council, Urbandale, IA, USA.

²Kacmar, K., Andrews, M., Rooy, D., Steilberg, R., Cerrone, S., 2006. Sure Everyone Can Be Replaced ... But at What Cost? Turnover as a Predictor of Unit-Level Performance. Academy of Management Journal 49, 133–144.