



Community Determinants of Rural Veterinary Longevity

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Introduction

Veterinary background

- Veterinarians are in high demand- 94% of the 2020 graduating class had opportunities lined up 2 weeks before graduation
- Veterinarians make several choices
 - What kind of practice-small animal, food animal/equine (large animal), mixed species
 - Location of practice- rural vs urban
- Although there are shortages of both rural and food animal veterinarians, we are focusing on the rural component



Introduction

Veterinary background

- Rural veterinarians are of national importance
 - 2003 National Veterinary Medical Service Act was passed to provide loan relief for veterinarians in shortage areas
- Between 2008 and 2013 the number of rural veterinarians decreased by 15%, and has continued to decrease an additional 17% between 2013 and 2018



National Veterinary Medical Service Act. 7 USC 3151a, 1415a.

Bain B, Hansen C, Ouedraogo F, et al. 2019 AVMA Report on Economic State of the Veterinary Profession. In: American Veterinary Medical Association; 2019.

Introduction

Literature

- Previous studies have mostly included surveys of veterinarians to determine why they are choosing rural veterinary medicine, or why they left
- Preferences for rural lifestyles, having a rural background, and quality of schools rise to the top of reasons to choose rural
- Reasons to leave rural practice include emergency duty, time off, salary, and lifestyle preferences
- Although retaining a veterinarian is important to remaining open as a clinic, personal preferences are only one component of veterinary clinic closure



Objectives

- Differentiate between rural communities that retain their veterinary practice(s) and those that experience a closure
- Determine the locational attributes that are significantly associated with veterinary clinics remaining in their community



Data

- A huge headache!
- Base data were gathered from Data Axle's longitudinal business database, flagging the establishments that were in the initial year (2014) and at some point dropped out of the data
- Undergraduate research assistant (thanks, Taylor Johnson!) used internet search tools to identify vet clinic type (small animal, large animal, mixed) and verified closure status of all Oklahoma vet clinics
- Control variables gathered from a variety of sources, including Census/ACS, BEA, Data Axle, and Stanford Education Data Archive

Methods

- **Probit regression* model:** outcome is whether a rural veterinary practice closed between 2015 and 2021

$$P(\textit{closed} = 1) = E_i + D_i + G_i + \varepsilon_i$$

- E: establishment variables, such as practice type and number of employees
- D: demographic variables, such as income and age of county residents
- G: geographic variables, such as rurality and nearby amenities

*As some data are missing, we run multiple models: one with all observations, dropping variables with missing entries; one with all variables, dropping observations with missing entries

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Results

- TBD

Discussion & Implications

- Pending results

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