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Valuing Feeder Calf Attributes across Regions

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Objective

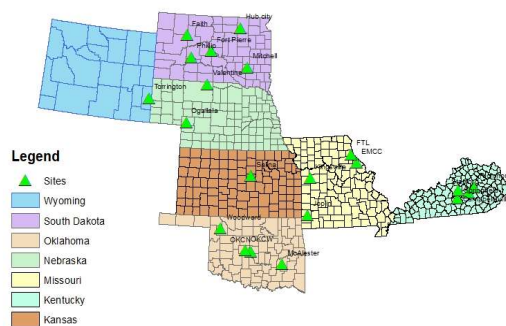
- Determine the differences in regional valuation of calf attributes by using a unique multi-state data

Motivation

- Feeder cattle market prices reflect the value of heterogenous cattle characteristics and distinct qualitative attributes, buyers' preference, and region-defined attributes at time of sale
- Cattle buyers assign prices to lots of calves based on characteristics influenced by differences in cattle types, management activities, and region-specific practices
- Most studies estimating market value of calf attributes and lots characteristics are location or state-specific due to data limitations
- Analyzing data from multiple regions enables the identification of regional production and marketing practices and different regional valuation of attributes

Data

- Sales data were collected at 78 sales at 22 live feeder cattle auctions across seven states
- 25,629 unique lots; 361,901 head of cattle



Model

- Bayesian hedonic model with non-informative priors

$$Y = X\beta + \varepsilon$$

$$\beta \sim N(0, 100)$$

where Y is basis (price – weekly futures), X is a matrix of explanatory variables, β is a vector of parameters, ε is the error term

Results and conclusion

Health status by state

	Estimate	95% CI	
Kansas & Unhealthy	-23.64	-35.44	-11.75
Kentucky & Unhealthy	6.87	-4.91	18.46
Missouri & Unhealthy	-21.63	-30.79	-12.51
Oklahoma & Unhealthy	-5.20	-12.50	2.12
South Dakota & Unhealthy	-1.00	-14.16	12.01
Wyoming & Unhealthy	-2.29	-18.14	12.31

Base: *Nebraska and healthy*

Vaccination by state

	Estimate	95% CI	
Kansas & vaccinated	-9.02	-14.51	-3.61
Kentucky & vaccinated	-2.35	-5.68	1.00
Missouri & vaccinated	0.56	-2.68	3.83
Oklahoma & vaccinated	-1.94	-4.88	1.03
South Dakota & vaccinated	0.50	-2.67	3.66
Wyoming & vaccinated	-2.31	-5.83	1.20

Base: *Nebraska & unvaccinated*

Certification by state

	Estimate	95% CI	
Kentucky & uncertified	-9.58	-16.64	-2.53
Missouri & uncertified	-7.10	-12.63	-1.55
Oklahoma & uncertified	0.77	-4.61	6.10
South Dakota & uncertified	0.38	-5.14	5.88
Wyoming & uncertified	-3.28	-10.00	3.56

Base: *Nebraska & uncertified*

- Variations in premiums and discounts for calf attributes suggest regional differences in market preferences and economic conditions
- Regional disparities emphasize the importance of value-added practices and enhanced data collection to better understand regional valuation of calf attributes