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*Agricultural Economics*

# ***Can Pet Insurance improve the Demand for Veterinary Services?***

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# Introduction

- ❑ Insurance allows consumers to pay a small monthly payment (premium) to avoid a significant financial burden in the future.
  - But...can it also change a consumer's behavior?
  
- ❑ Incentive to visit veterinarian's office at the first sign of illness/injury
  - Attempt to recuperate premium paid?



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# The Questions

- Does pet health insurance impact expenditures on pet healthcare?
- Does pet health insurance impact the number of visits to a veterinarian's office?
- Are policy holders expecting to recuperate their premium?



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# The Survey Sample

- Qualtrics
  
- 750 Total Observations
  - 500 with pet insurance
  - 250 without pet insurance



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# Insurance Questions

If yes, approximately when did you first purchase Pet Health Insurance for Pet ?

Please select all the characteristics from your Pet Health Insurance policy:

	Annual Deductible	Monthly Premium	Wellness Plan	Coverage				
	Dollar	Dollar		Illnesses	Accidents	Emergencies	Chronic/ongoing diseases (ex. allergies)	Dental surgeries
Pet Health Insurance Policy for Pet features:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



# Past Expenditures Questions

How much did you spend exclusively on medical treatment for last year? *[Including wellness or preventative care]*

\$

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Was this medical treatment covered by Pet Health Insurance?

- Yes
- No



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# Past Expenditures Questions

How many times has **been ill in the last 12 months?**

Please describe the Health Expenses that has incurred during the last 12 months,

	Total Cost Dollar	Pet Health Insurance covered?	Insurance Payout Dollar
Wellness/Routine Care	<input type="text"/>	<input type="checkbox"/> ▼	<input type="text"/>
Accident/Illness	<input type="text"/>	<input type="checkbox"/> ▼	<input type="text"/>
Chronic Conditions	<input type="text"/>	<input type="checkbox"/> ▼	<input type="text"/>
Genetic Conditions	<input type="text"/>	<input type="checkbox"/> ▼	<input type="text"/>
Major Illness [ie. Cancer]	<input type="text"/>	<input type="checkbox"/> ▼	<input type="text"/>
Other Health Expenses <i>[Please specify]</i> <input type="text"/>	<input type="text"/>	<input type="checkbox"/> ▼	<input type="text"/>





# The Models

## □ Ordinary Least Squares Regression Model

- Expenditures =  $f(\text{Insurance, Dog Characteristics, Owner Demographics})$

## □ Negative Binomial Regression Model

- Number of visits =  $f(\text{Insurance, Dog Characteristics, Owner Demographics})$



# Expenditures Results: Insurance, Financial Info, Pet Health

Variable	Parameter Estimate	Std. Error	T-Value	P-Value
<b><i>INSURED</i></b>	<b>211.16</b>	<b>103.90</b>	<b>2.03</b>	<b>0.04</b>
Wellness	-162.55	108.79	-1.49	0.13
Would \$1,000 bill cause financial stress?	59.39	63.99	0.93	0.35
<b><i>Major illness in the past?</i></b>	<b>161.95</b>	<b>76.12</b>	<b>2.13</b>	<b>0.03</b>
<b><i>Perceived likelihood of major illness in the next year</i></b>	<b>4.23</b>	<b>1.45</b>	<b>2.91</b>	<b>0.004</b>
<b><i>Expenditures on other*</i></b>	<b>0.16</b>	<b>0.04</b>	<b>3.90</b>	<b>0.0001</b>

Variables in Bold are statistically significant.



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# Expenditures Results: Pet Information

Variable	Parameter Estimate	Std. Error	T-Value	P-Value
Purebred	-4.80	61.54	-0.08	0.93
Dog's Age	4.56	8.02	0.57	0.57
Fixed	78.32	56.98	1.37	0.17
<b>Large Breed</b>	<b>232.26</b>	<b>82.22</b>	<b>2.82</b>	<b>0.005</b>
<b>Sleep in Bedroom</b>	<b>105.26</b>	<b>48.60</b>	<b>2.17</b>	<b>0.03</b>

Variables in Bold are statistically significant.



# Expenditures Results: Owner Demographics

Variable	Parameter Estimate	Std. Error	T-Value	P-Value
Male Owner	5.63	68.58	0.08	0.93
Owner unemployed	3.96	67.22	0.06	0.95
Owner Age	1.33	1.69	0.79	0.43
High School Education	-24.04	50.11	-0.48	0.63
<b>Income &gt; \$55k</b>	<b>164.19</b>	<b>52.10</b>	<b>3.15</b>	<b>0.002</b>

Variables in Bold are statistically significant.



# Negative Binomial Count Model

- How many visits to veterinarian's office
- Visits =  $f(\text{Insurance, Dog Characteristics, Owner Demographics})$



# Visits Results: Insurance, Financial Info, Pet Health

Variable	Parameter Estimate	Std. Error	P-Value
INSURED	-0.1055	0.0904	0.2434
<b>Wellness</b>	<b>0.1790</b>	<b>0.0853</b>	<b>0.0359</b>
Would \$1,000 bill cause financial stress	0.1123	0.0643	0.0806
<b>Major illness in the past</b>	<b>0.1653</b>	<b>0.0730</b>	<b>0.0235</b>
<b>Perceived likelihood of major illness in the next year</b>	<b>0.0048</b>	<b>0.0013</b>	<b>0.0004</b>
<b>Expenditures on other*</b>	<b>0.0002</b>	<b>0.0000</b>	<b>&lt;.0001</b>

Variables in Bold are statistically significant.



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# Seemingly small, but economically important

- ❑ 0.179 visits/year is insignificant on an individual basis, but
- ❑ If you have 500 clients, all with a wellness plan...
  - 89.5 extra visits/year
  - At \$100/visit = nearly \$9,000 in additional revenue



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# Visits Results: Pet Information

Variable	Parameter Estimate	Std. Error	P-Value
Purebred	0.0700	0.0636	0.2717
<b><i>Dog's Age</i></b>	<b><i>-0.0371</i></b>	<b><i>0.0109</i></b>	<b><i>0.0007</i></b>
Fixed	0.0175	0.0656	0.7895
Large Breed	0.0674	0.0775	0.3851
<b><i>Sleep in Bedroom</i></b>	<b><i>0.1869</i></b>	<b><i>0.0691</i></b>	<b><i>0.0068</i></b>

Variables in Bold are statistically significant.





# Visits Results: Owner Demographics

Variable	Parameter Estimate	Std. Error	P-Value
Male Owner	-0.0885	0.0686	0.1972
Owner unemployed	0.0185	0.0924	0.8412
Owner Age	-0.0013	0.0023	0.5761
<b>High School Education</b>	<b>-0.2379</b>	<b>0.0895</b>	<b>0.0079</b>
Income > \$55k	0.0576	0.0677	0.3947

Variables in Bold are statistically significant.



# Are Policy Holders Expecting to Recuperate Premium Paid?

- What are your expected expenditures for pet health care over the next year?
- Expected Expenditures =  $f(\text{Insurance premium, Deductible, Annual Limit, Dog Characteristics, Owner Demographics})$



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# Are Policy Holders Expecting to Recuperate Premium Paid?

Variable	Parameter Estimate	Std. Error	P-Value
Insurance Deductible	0.00623	0.03045	0.8381
Insurance Limit (\$1,000)	-76.62964	58.85827	0.1937
<b>Annual Insurance Premium Paid</b>	<b>0.40366</b>	<b>0.10276</b>	<b>0.0001</b>
<b>Wellness Plan</b>	<b>-137.03986</b>	<b>71.34755</b>	<b>0.0555</b>



# Conclusions

- ❑ Does pet health insurance impact expenditures on pet healthcare?
  - In short, yes
  - Ultimately there are several drivers
    - Insurance
    - Pet Demographics
    - Owner Demographics



# Conclusions

- ❑ Does pet health insurance impact the number of visits to a veterinarian's office?
  - The evidence does not suggest so, but...it's complicated
    - A wellness plan does
  - Why not?
    - Could be a multitude of reasons
    - One possibility: if pet is ill/injured they will be brought in, but treatment choice will vary



# Conclusions

- ❑ Evidence suggests pet health insurance could be beneficial to veterinarians
  - Increases expenditures
  - Visits not impacted
  - Peace of mind to pet owners
  
- ❑ Pet insurance a major driver, but not only driver of expenditures
  - Owner's income
  - Risk perceptions
  - Owner-Pet Relationship



# Future Research...

- ❑ On average, pet health insurance increases expenditures, but...
  - Are there certain plan attributes that have an impact (positive or negative)?
    - Deductible
    - Reimbursement rate
    - Conditions covered
- ❑ What role does a wellness plan have?
  - Impact on visits
  - Impact on overall pet health



# Questions/Comments?

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