ASPCA

Boosting Dog Adoption Rates: Insights on Fees, Social Media, and Vaccination Status

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Problem Statement

Facing a significant challenge in **increasing pet adoption rates**

Problem details:

- Limited community engagement, ineffective marketing, and societal misconceptions
- Increasing pet's vulnerability, burdening shelters and preventing others from receiving care

Modifiable factors:

adoption fee

social media exposure

vaccination

In 2023,

6.5 million

cats and dogs entered shelters and rescues across America

Shelter Animals Count, 2024

Previous Studies

Existing studies highlight several promising approaches to adoption challenges:

- **Vaccination and sterilization** significantly increased adoption rates, and vaccinated pets were adopted 20% faster, while **reduced adoption fees** also influenced decision-making. ----Zadeh et al. (2022)
- **Social media** plays a critical role in boosting adoptions, with high-quality posts and consistent engagement driving inquiries and community involvement. ----Videira et al. (2023)

Research Questions

Question 1

Would decreasing the adoption fee for dogs increase the adoption rate at ASPCA within a three-month period?

Question 2

Would increasing social media exposure (e.g. frequency and number of posts) for dogs lead to a higher adoption rate at ASPCA within a three-month period?

Question 3

Would offering fully vaccinated to dogs lead to a higher adoption rate at ASPCA within a three-month period?

Experimental Methodology

- **Design: Randomized Controlled Trial (RCT)**
- **Groups:**
  - **Fee Reduction: 506 dogs**
  - **Social Media: 128 dogs**
  - **Vaccination: 226 dogs**
- **Randomization: Implemented via R programming.**
- **Inclusion Criteria: Healthy, non-aggressive dogs aged 1-5, 5-30 kg.**
- **Exclusion Criteria: Behavioral issues, health problems, service dogs, etc.**

Operational Procedures

- **Fee Reduction:**
  - **10% discount for treatment group; standard fees for control group.**
- **Social Media Exposure:**
  - **Enhanced posts (frequency, quality) for treatment group.**
- **Vaccination Status:**
  - **Fully vaccinated treatment group vs. unvaccinated control group.**
- **Duration: 3 months.**

Statistical Analysis Plan

- **Primary Method: T-Test**
  - **Compares adoption rates between treatment and control groups.**
- **Metrics: Mean effect, p-values, and 95% confidence interval.**
- **Sample Sizes:**
  - **Fee Reduction: n=506 (d=0.20)**
  - **Social Media: n=128 (d=0.45)**
  - **Vaccination: n=226 (d=0.38)**
- **Power: 90% at α=0.05.**

P-values
No Effect: >0.05
An Expected Effect: <0.05

Key Findings

Research Question	Scenario	Percentage of False Positives	Percentage of True Negatives	Percentage of False Negatives	Percentage of True Positives	P-Value
Question 1	No Effect	4.1%	95.9%	N/A	N/A	0.12
Question 1	Effect: 10 percentage point increase	N/A	N/A	23.6%	76.4%	0.03
Question 2	No Effect	5.0%	95.0%	N/A	N/A	0.15
Question 2	Effect: 20 percentage point increase	N/A	N/A	20.1%	79.9%	0.01
Question 3	No Effect	6.3%	93.7%	N/A	N/A	0.10
Question 3	Effect: 15 percentage point increase	N/A	N/A	22.3%	77.7%	0.02

Cost Analysis

FEE REDUCTION

SOCIAL EXPOSURE

VACCINATION

Cost per 100 dogs

Recommendations

- **Social media exposure:**
  - **Increase the number of posts**
  - **Update the story and images regularly**
- **Fee reduction:**
  - **Reduce the fee (busy period, long waiting time dogs)**
  - **eg., discount, waiving the fee**
- **Vaccination status:**
  - **Provide the vaccination**
  - **Highlight the advantage**
- **Based on the cost and effect**

Limitations

Overestimate the treatment effect

SAMPLE SELECTION

Unmeasured confounding factors

RCT DESIGN

Interaction effects not considered

TESTING METHOD

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