

Effect of Dog Condition at Los Angeles County Animal Care Centers

AP Research

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Abstract

Dog relinquishment affects county animal shelters as owners decide to surrender their animals due to their inability to meet their pet's needs. Upon impoundment, an assessment of the dog's condition occurs to evaluate a dog's health or behavioral needs. At Los Angeles animal shelters, limited resources and higher impoundments contribute to decreased adoptions among dogs with health or behavioral-related conditions. Through interviews of members of the Los Angeles county's Animal Care Centers and examinations of animal impoundment records from Los Angeles county animal shelters, proposals were formed to address the observed trends of euthanasia. Expanding a shelter's volunteer force, promoting interactions between the community and animal shelter and using resources towards dogs with health and behavioral related conditions increased more successful adoptions.

Introduction

Adoption of dogs from animal shelters have given the population a cheaper, accessible route for including a pet into several households. The process of adoption depends on the adopter's acceptance of the dog's features, behavior and medical needs. Adopting a dog based on its features, however, can result in an owner surrendering their pet due to the dog's behavior or incompatibility with their lifestyle. Frequently, dogs are relinquished due to health or behavioral reasons. Behavioral reasons include aggressive actions, like biting or attacking, hyperactivity or fearful mannerisms. Health reasons include illness, injury or inability to provide sufficient pet healthcare. Shelters must find ways to efficiently distribute resources to the larger amounts of dogs because of increased relinquishments. Furthermore, relinquishments affect the

rates of euthanasia at animal shelters because they are attributed to increasing impoundments and decreasing the amount of available resources for each dog.

Literature Review

Research was conducted on different aspects of dog adoptions and euthanization. Characteristics of adoptable dogs were examined to make proposals on promoting dog adoption rates and addressing dog euthanasia rates. From adoption rates, studies conducted surveys to define frequent reasons of relinquishment and socioeconomic trends of relinquishers to suggest methods of increasing pet retention rates. Specific research investigated methods used to combat high euthanasia rates.

Studies confirmed adoptable dogs characteristics; small, long-haired and younger dogs were preferred by adopters (Lepper, Kass, & Hart, 2002; Sietou, Fraser, I. M., & Fraser, R. W., 2014). DeLeeuw (2010) found that being purebred, female or a stray, not having black fur, and having medium hair was attractive to a majority of adopters, while confirming that younger, smaller dogs were also adopted more often. Adopters often base their decision to adopt on the dog's appearance, but could be influenced by interactions between the adopter and dog; emphasis on the dog's personality and behavior would result in better compatibility between the owner and pet, thus creating a reluctance to relinquish the dog later on (Weiss, Miller, Mohan-Gibbons & Vela, 2012; Protopopova, & Wynne, 2014). This trend of focusing appearance can explain why specific breeds spend longer times in animal shelters, and why particular breeds are popular among adopters. Bringing a dog home based on appearance increases the risk of relinquishment as researchers urged adopters to educate themselves on dog behavior to ensure that the dog is compatible with their lifestyles (Mondelli, Prato Previde,

Verga, Levi, Magistrelli, & Valsecchi, 2004; Shore, 2005). If adopters continually adopt dogs because of their appearance, they show a lack of knowledge of proper dog behavior and care and relinquishment is inevitable as adopters have the chance of being incompatible with their pet. Ill-informed adoptions result in additional impoundments at shelters and increased difficulty with distributing resources to dogs.

Dogs are surrendered due to either failure of the adopter to adjust their lifestyle, or issues with dog behavior or health (Shore, E.R., 2005). Additionally, frequent risk factors for relinquishment pertaining to owners are cited as cost and unavailability of services; new owners of adopted pets are faced with dilemmas regarding relinquishment that are correctable with assistance from shelters or their community (Dolan, Scotto, Slater, & Weiss, 2015). Dogs with a history of health and behavioral issues had a higher likelihood of not being retained and instead relinquished as found by the American Humane Association (2013). For dogs with health-related conditions, veterinary services from animal organizations are necessary to ensure that a dog remains with its household because previous studies determined that having a support system for new adopters improves pet retention rates (Scarlett, Salman, New, & Kass, 1999; Shore, 2015). Other reasons for relinquishing a recently adopted dog include expectations not being met by the newly adopted dog. This is attributed to a lack of knowledge about animal behavior or an inappropriate lifestyle in which the dog was isolated and led to misbehave, performing behaviors such as chewing on things out of boredom, soiling the house due to inattentiveness by owner. From these findings, one could consider that the adopter was not well-informed about their decision to adopt an animal, which led to relinquishment (Zawistowski, Morris, Salman, Ruch-Gallie, 1998). Services from veterinarians, specialized

advice from shelter employees, and educational and behavioral training would prevent relinquishment of pets (Scarlett et. al, 1999; Shore, 2015). Addressing reasons of relinquishment through provision of vital information from the shelter staff, can push a match based on personality, behavior and lifestyle, instead of appearance.

Specific research confronts relinquishment through investigation of adopter socioeconomic characteristics and dog characteristics. Focusing on socioeconomic characteristics speaks to relinquishment reasons and adoption trends within gender and income. The Regional Shelter Survey characterized the trends associated with increased animal shelter intake of dogs and cats and involved determining the traits of relinquished animals and their surrenders. After determining that socioeconomic influencers are a main determinant when considering animal adoptability, the study's survey recorded owners' reasons for relinquishment and owner socioeconomic traits and it concluded that "gender, level of education, and cultural or ethnic identity had no effect on relinquishment" (Salman, New, Scarlett, Kass, Ruch-Gallie, & Hetts, 1998). The results of the survey are supported by the conclusions of later research that income does not influence relinquishment (Dolan et. al, 2015). From the Regional Shelter Survey, frequent reasons of relinquishment were human lifestyle or animal behavioral incompatibility which were confirmed as common relinquishment reasons by Shore's 2005 study.

Exploring the characteristics of populations contributing to higher pet retention rates led to findings suggesting that certain combinations of social factors attribute to a pet's likelihood of staying with their adopted families. A study by the American Human Association, observed that those who adopted a pet were more likely to keep their pet if they had no children, were

Caucasian, college graduates who earned “lower for those living in a small town” (2013).

Although Salman et. al. (1998) stated that gender, education level and ethnicity had no effect on pet-surrenders, this research suggests conclusions about pet retention influencers by defining a demographic contributing to lower impoundments. Appealing to specific demographics that have high pet retention rates can allow animal shelters to experience less impoundments, which permit shelters to use more resources towards addressing dogs with behavioral or health-related conditions’ needs.

To reduce the relinquishment rates, implementation of animal education and community outreach in the demographic most likely to relinquish a dog based on behavioral or health reasons was stressed in previous research. Animal shelters focusing on integrating transfer programs that increase adoption of surrendered pets to lower their euthanasia rates require shelters to describe an animal’s health and behavioral status before the animal is transferred (Simmons, & Hoffman, 2016). Animals with health and behavioral problems could be traumatized or spread an illness, resulting in incomplete transfers for these animals. Shelters that have transfer programs authorize placement of dogs without health or behavioral conditions in shelters with higher adoption rates to prevent high euthanasia rates at their shelter.

Studies determined varying justifications of surrendering a pet, but there are two constant reasons that remain: pet behavior and pet health. Studying the trends associated with a dog’s condition and outcome will determine what follows after surrendering a dog for health or behavioral related reasons. To address research centering on adoptable pet characteristics, looking to a dog’s initial condition upon impoundment adds to the discussion of potential influencers of dog adoptability. This gives rise to new hypotheses dealing with the probability of

adoption and a dog's initial condition, as condition is based on the dog's overall appearance, behavior and health. By focusing on dogs with health and behavioral related conditions, the probability of adoption or euthanasia for dogs relinquished for health or behavioral reasons can be determined. Finding the demographic which relinquishes dogs with health and behavioral conditions with the highest frequency allows overpopulated animal shelters to change their adoption process to prevent relinquishments involved with health and behavioral reasons from that area. From identification, income can be observed to determine whether or not it is an influencer with relinquishments. Research concluded that income does not affect relinquishment, even though, medical costs are a frequently cited reason for pet surrendering. Evaluating the extent a dog's condition has over its likelihood of adoption directs the perspective towards how animal shelters are addressing impoundments involving dog health and dog behavior. Euthanasia and adoption rates reveal the efficiency of distribution of resources towards specific dog populations within shelters.

Methods

Records from Los Angeles County from the Animal Care and Control department offered insight on the topic of dog relinquishments. The records were dated from January 2014 until December 2016, however, the records from January 2016 to December 2016 were excluded because a majority of the relinquished dogs did not have a recorded outcome. Records from the Agoura, Carson, and Castiac Animal Care Centers were chosen because they reflected the suburban, urban and rural demographics of Los Angeles County. Including these three demographics promotes in-depth examination of areas with specific economic and residential characteristics.

The records included the following information: the date of relinquishment, the dog's coloring, age, breed, recorded condition upon its relinquishment, and its outcome, which included the results of being adopted, rescued by a rescue organization, euthanized, returned to the owner, transferred or Closer to Home outcomes, and the date of the recorded outcome and the zip code of the owner who relinquished their dog. The Closer to Home transfer program is specific to Los Angeles County, where dogs are rehomed based on local availability of dogs. The outcomes of relinquished dogs from particular areas were compared and then categorized into three different groups: Normal, Health and Behavioral, and Other. Dogs with the "N" or normal condition upon impoundment were placed in the Normal category, dogs with the condition of aggressive, ill, injured, fearful, registered to veterinary technician, quarantine, skin condition, and veterinary check were placed in the Health and Behavioral category. Dogs that had conditions such as dead, nursing, unweaned and in heat were put in the Other category.

Comparison between the two major groups, Normal and Health and Behavioral, was focused on due to the research project's goals of observing the extent of influence a dog's condition has over its outcome. It can be hypothesized that dogs within the Health and Behavioral category have higher rates of euthanasia due to the population requiring more resources either for medical treatments or behavior training. The frequency of outcomes were then compared through the formation of charts that had raw numbers converted in percentages.

The zip codes were categorized based on median household income, their relative distance from each other and the examined animal shelters, and were labeled alphabetically from A to AE (See Appendix A). Zip codes were grouped using this specific method because relative distance influences the decision to relinquish due to the apparent convenience associated with

distance when surrendering dogs. By categorizing zip codes by the relative distance, regions within Los Angeles county would be accurately defined. Using median household income as opposed to average household income allows for the data to not become skewed due to potential outliers within the data set. For example, the zip codes of 91360, 91307, 91362 and 91377 are within a close proximity of one another but have varying median household income values. If these zip codes were grouped together, they would not represent a similar economic background of the region, but instead suggest conclusions about relinquishment and a household's distance from pet surrendering sites. The specific methodology produces an accurate representation of an area's likelihood to relinquish dogs based on economic and distance factors.

The specific region that most frequently relinquishes dogs that belong in the Health and Behavioral category will be identified from the records. Those areas that frequently surrender dogs hypothesized to have higher rates of euthanasia are considered areas needing stricter adoption policies to hinder the pet relinquishment contributing to high euthanasia rates. This identification can specify which areas are unsuccessful with their pet retention rates so precautions can be taken to combat these issues.

Another component of the applied methods in this specific research project included interviews of shelter volunteers and managers. The interviews (see Appendix B) utilized questions regarding specific adopter populations and noted trends associated with adoption and euthanasia rates among the shelter's general population of dogs. Interviewing the population with knowledge about dog adoptions, can confirm or refute trends observed in the previously described records. The participants' personal experiences with the adoptability of dogs can lead to developing a more precise approach to improving pet adoption rates of dog with health and

behavioral conditions among households. Recording participants' opinions on the success of community outreach events or specific advertising methods can identify which outreach methods work best in either urban, suburban or rural demographics. Overall, 15 Los Angeles County Animal Care Center managers and volunteers were interviewed to produce the following results and conclusions.

Results

Agoura

In 2014, the 428 dogs were owner-surrendered, 240 were classified as "Normal," 170 had Health and Behavioral conditions and 18 dogs classified as "Other." 10.8% of the Normal group and 17.8% of the Health and Behavioral group were euthanized. Although there are higher rates of euthanasia among the Health and Behavior group, Agoura maintains high adoption rates. These adoption rates are attributed to Agoura's volunteer program and facilities that oversee a smaller number of impoundments. Volunteers give attention and training to dogs that corrects unadoptable characteristics. Agoura receives several transfers due to the center's small amount of impoundments, active community outreach methods and higher adoption rates. This presents recognition of Agoura's success by other Los Angeles animal shelters as Agoura appeals to several adopter demographics. Their adoption rates translate into the ability to take in impoundments from other Los Angeles shelters.

For 2015, 249 dogs were classified as Normal, 145 were put in the Health and Behavioral group from 395 impoundments. 8.5% of Normal and 23.6% from Health and Behavioral groups were euthanized. The euthanasia rate of dogs with health and behavioral conditions was almost three times more than that of those with normal condition due to the

smaller number of dogs within the Health and Behavioral group. Agoura's involvement with community outreach through social media, newspapers and various forms of communication helped maintain high adoption rates. The manager noted that adopters with the same illnesses as dogs, like diabetes or cancer, helped improve the adoption rate with health and behavioral conditions because the adopters felt like they understood how to care for the dog (D. Rosen, Personal communication, March 30, 2017). Appealing to specific health-related demographics allowed Agoura to promote adoptions among dogs with health and behavioral conditions, however, the group's euthanasia rate remained higher than the Normal group's rate. Overall, members of Los Angeles county recognize the impactfulness of the shelter due to their methods of community outreach, extensive volunteer program and spacious facilities, which contribute to high adoption rates of the Normal and the Health and Behavioral group.

The areas that the Agoura animal shelter serves areas with higher median income ranges. The region, "O," that had the most relinquishments of dogs with health and behavioral conditions had a median income range of \$90,000 to \$100,000, close proximity to the shelter, which explains the several relinquishments due to the available convenience. Additionally, O is dominated by family households. There are several possibilities for relinquishment within family households; families undergo lifestyle changes frequently and must provide for children daily. Dogs are an economic drain on households and dogs with health and behavioral conditions require more time and resources, which can include veterinarian visits or additional training. Notably, there were fewer relinquishments compared to the urban area of Carson, which could correlate with the higher median income of the area. This contributes to the probable conclusion that median household income influenced relinquishment. Furthermore,

these conclusions infer that in a suburban environment, if a household is within a close proximity of the Animal Care Center or defined as a family household, the risk for relinquishment increases.

Carson

A population of 746 with normal condition and 889 with health and behavioral condition and a total of 1,687 dogs were impounded in 2014. There is a significant increase of euthanasia among those with health and behavioral conditions, as 10.5% of the dogs within the Normal category were euthanized compared to 39% of the dogs within the Health and Behavioral category. Despite the increased number of impoundments, Carson retains euthanasia rates among the Normal group similar to Agoura. However, interviews with managers about higher rates of euthanasia among the Health and Behavioral group had themes pertaining to that they made the best effort for adoptions, but that space is limited. To combat euthanasia, Care Centers utilized transfer programs, either within the county or out of state, ensuring that more dogs could be adopted. These results indicate that urban Animal Care Centers have higher rates of euthanasia among dogs with behavioral and health related conditions, but recognize a need to create available resources for them.

Within the year of 2015, the same trend of higher euthanasia rates among dogs with health and behavioral conditions continued from 2014. Of the total of 1,489 impoundments, 660 dogs were categorized as Normal, while 806 were placed under the Health and Behavioral category. 2.7% of the Normal category and 34.1% of Health and Behavioral group were euthanized. Efforts were made to promote adoption among dogs of the Normal group due to the decrease in euthanasia from 2014 to 2015. These results, however, stress the need for Animal

Care Centers to focus on providing for dogs with health and behavioral conditions to vanquish the fear of euthanasia accompanied with the owner's decision to surrender their pet. Owners surrendering their dogs, due to either behavioral or medical reasons, maintain emotional attachment and guilt during relinquishment. These attitudes translate into the former owner not accurately reporting reasons for surrendering the dog, as discussed by managers (F. Agoopi, Personal communication, March 20, 2017; J. Gutierrez, Personal communication, March 18, 2017). The consequences of emotional attachment forces the animal shelter to not properly aid or match dogs to fitting households.

Carson had relinquishments hailing from two different areas each year. Region "AB" had the most health and behavioral relinquishments for 2014, whereas region "S" had the most relinquishments for 2015. AB consisted primarily of family households, with a relative distance of five to ten miles away and a median household income range of \$50,000 to \$60,000. S mainly composed of people living by themselves, with a relative distance of ten to fifteen miles away and a median income range of \$40,000 to \$50,000. Both had similar income levels, however, their household types contrasted. As a result of this conflict, there appears to be no correlation between relinquishments and type of household within the urban demographic. The higher number of impoundments, compared to Agoura and Castiac, are attributed to the significantly higher number of low median income areas Carson services and shorter distance from the Animal Care Center. The trend concludes that distance and median household income does influence the overall amount of relinquishments of dogs with health and behavioral conditions within the urban demographic.

Castaic

From a total of 530 impoundments in 2014, 316 were placed into the Normal group and 196 in the Health and Behavioral group. 4.5% of the Normal group were euthanized compared to 41% the Health and Behavioral group. Those with normal conditions had greater chances of being adopted. These results suggest that an emphasis of utilizing resources towards dogs with health and behavioral conditions needs to be placed within adoption procedures. Interviews observed that Castaic had spacious facilities, however, there was little discussion about the shelter's volunteer program. Expanding the volunteer force for Castaic would allow for more interaction and attention for dogs with health and behavioral conditions.

In 2015, there were 700 total impoundments. 406 were classified in the Normal group and 254 in the Health and Behavioral group. Only 3.7% of those of the Normal group were euthanized compared to 45.6% of those within the Health and Behavioral group. Like the results of Carson, Castaic was able to achieve low euthanasia rates for dogs within the Normal group. The increase in euthanasia in the Health and Behavioral group suggests that an effort must be made to direct resources towards that specific group. The significant increase of the rate of euthanasia among dogs with health and behavioral conditions are a result of the Animal Care Center not expending its resources correctly, lack of involvement from volunteer organizations and an absence of rescue organizations with preventing euthanasia.

Castaic's area with the most health and behavioral relinquishments for 2014 and 2015, region V, was similar to region O of the Agoura results. The area is dominated by family households and has a median household income range of about \$90,000 to \$100,000. The relative distance, about 15 to 20 miles away, increased, but a possible explanation for the

distance trend is that the shelter serves zip codes encompassing larger areas, whereas within an urban demographic, there is a shorter relative distance because zip codes are closer to one another.

Discussion

The findings reflected conclusions made in previous research. Investigation of relinquisher proximity to the Animal Care Center and income was measured to determine probabilities of surrendering dogs. Dog condition upon impoundment was a pivotal influencer when considering euthanasia; proposals for promoting adoption among dog with health and behavioral conditions were formed from the results and conclusions from earlier studies.

Income was an influencer in relinquishment when coupled with a close proximity to the animal shelter, as seen with the high number of impoundments at the Carson Animal Care Center, which is inconsistent with Dolan's findings (2015). Although the household type had little influence over relinquishment within an urban demographic, the income level and proximity to the animal shelter contributed to the high amount of impoundments.

The plethora of possibilities for relinquishment relating to health or behavioral reasons for family households elaborates on the high number of surrenders from family-dominated regions with rural and suburban areas. Research encompassing various Animal Care Centers from varying regions of the country, confirmed that buying a dog for the children or particular dog aggression behaviors, like biting a child, were factors of relinquishment from family households (New, Salman, Scarlett, Kass, Vaughn, Scherr, & Kelch, 1999).

The higher rates of euthanasia among dogs with health and behavioral conditions correlate with DeLeeuw's conclusions, where pet health was a frequent reason for

relinquishment (2014). Positive interactions and behavioral training are key components when dealing with dogs behavioral conditions. According to animal adoption scholar, Emily Weiss (2015), and interviews with the Agoura shelter manager, the interactions between potential adopters and dogs influence the decision to adopt (D. Rosen, Personal communication, March 30, 2017). Ensuring that a dog's behavior that is compatible with an adopter's lifestyle prevents the possibility of future relinquishment as there is a greater likelihood for the development of true companionship, resulting in a reluctance to relinquish the dog later on. Behavior assessment determines what measures must be taken, either training or use of extra resources, to increase the dog's adoptability (Mondelli et. al, 2004). The confirmation that condition affects a dog's outcome and that dogs with health and behavioral conditions have higher chances of euthanasia makes it imperative for animal shelters to direct resources and volunteers towards these dogs and their potential adopters.

Supporting adopters of dogs with health and behavioral conditions prevents relinquishment resulting in euthanasia. Furthermore, these findings reflect the conclusions by the American Human Association study that urged shelters to establish connections between adopters and shelters to promote pet retention (2013). Available resources for adopters of health and behavioral condition dogs contribute to a higher pet retention rate and lower euthanasia rates.

Transfer programs provide a viable option for dogs with an objectively higher adoptability to be adopted in a different area, but the option is not always available to dogs with health and behavioral conditions. Dogs with behavioral conditions face a stressful situation in which the dog's temperament cannot handle the process and dogs with health conditions,, can

spread sickness to other shelters through the transfer, as observed by Simmons and Hoffman's study (2016). A proposal to efficiently use transfers is to focus on transferring dogs without health and behavioral conditions and strengthening relations with partnered rescue groups focused on providing animal training and healthcare. Transferring dogs without health and behavioral conditions allows the shelter to use more resources towards dogs with health and behavioral conditions. Working with rescue organizations specifically for animal training and healthcare decreases the risk of relinquishment for dogs with health and behavioral conditions. Ensuring that an adopter of a dog with behavioral or health conditions has resources and support from the Animal Care Center is imperative with promoting pet retention.

Conclusion

Dogs with health and behavioral conditions have a higher likelihood of being euthanized, due to expending excess resources on these dogs. Those surrendering dogs for the reasons of medical and behavioral face a difficult choice as these findings confirm the undesirable outcome of euthanasia for previous owners. Working to decrease euthanasia rates among this specific group combats the discussed problem of surrenderers giving inadequate information to the animal shelter regarding their surrendered dog. The lack of information hurts the dog's adoptability as interviews observed that dogs with background stories had higher chances of adoption, especially in facilities with high impoundments. When relinquishing dogs, it is important to set aside emotions and give sufficient information to the animal shelter, as backstories help improve the potential for adoption and identifying the dog's needs

Suburban and rural environments yielded similar results for the demographic with the highest amount surrenders of dogs with health and behavioral conditions but rural areas had

farther distance from the animal shelter. The median household income and household type remained the same for the suburban and rural demographic as expressed in descriptions by census and county-provided data. The urban demographic had more impoundments due its close proximity to the animal shelter and outreach to low income areas. The household type had little effect on the amount of relinquishments within the Health and Behavioral group. The examined suburban and rural areas that surrendered the highest amount of dogs with health and behavioral conditions maintained similar results, while the urban demographic's surrenders are influenced by the animal shelter's proximity and serving of low to average median income areas.

Increased adoption rates of dogs with health and behavioral conditions are attributed to active volunteer forces, spacious facilities for interaction between dogs and potential adopters and usage of resources towards dogs with health and behavioral conditions. Having a volunteer force impacts the adoption rates of dogs with health and behavioral conditions as trusted information about the dog's state is easily given to potential adopters. Facilities that allow dogs to receive exercise, attention and positive interactions with potential adopters contribute to higher adoption rates, as potential adopters respond well to spacious facilities.

Dogs with health and behavioral conditions are less likely to experience a transfer to another Animal Care Center, which allows dogs without behavioral or health conditions to be transferred and permits dogs with health and behavioral conditions to have access to more resources and attention from the animal shelter. Reaching out to specific medical demographics where potential adopters possess similar health conditions as dogs with health conditions can improve rates of adoption. Ultimately, the discussion and results address combatting high rates of euthanasia among the population of dogs with health and behavioral conditions.

Limits

The research is applicable to areas similar to Los Angeles County due to the two sets of data obtained, the records about dogs relinquished to three selected Animal Care Centers, and another from interviews of volunteers and managers for Animal Care Centers. The interviews were conducted with a small population within Los Angeles County, limiting the previous conclusions about dog adoptions. The sample size regarding records of dog-relinquished by previous owners is much greater than the sample size of the data from interviews, but formatted a precise conclusion from that data set. The decision to focus on the surrenderers' zip codes was influenced by the research available and the desire to not compromise personal information specific to relinquishers.

If one were to look at the categories of zip codes, each region represents a general median income and household type. The category does not accurately represent individual households that relinquished a dog to the studied Animal Care Centers due to the generality of the established categories. The categorization of the zip codes could have resulted in a skewing of the true amount of impoundments from observed regions, as some categories had fewer zip codes than others.

Measuring reasons of relinquishment was limited. From the records provided by the county, there is no available data on the reasons of relinquishment, so it is not certain if a dog was relinquished for a health or behavioral reason based on its condition. Conditions of dogs, especially behavioral conditions, can be subjective. The amount of experience and knowledge of dog behavior and health an animal shelter employee has affects how a dog's condition is classified.

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Appendix A: Categorization of Zip Codes A to AE

Category	Zip Codes
A	90242, 90716, 90723, 90805, 90810
B	90020, 90059, 90220, 90221, 90222, 90262
C	90802, 91702, 91706, 91731, 91732, 91755, 91801
D	91744, 91745, 91746, 91789, 91790, 91791
E	90001, 90002, 90003, 90028, 90044, 90045, 90047, 90061
F	90265, 90272, 90290, 91364, 91423
G	93003, 93004, 93005, 93022, 93030, 93035, 93060
H	93010, 93012, 93021, 93036
I	90049, 90274, 90275, 90403, 90404
J	91401, 91402, 91405, 91406, 91411
K	91387, 93510, 93536, 93551, 93552
L	91301, 91302, 91307, 91377
M	93534, 93535, 93550, 93591
N	91304, 91305, 91311, 91356, 91367
O	91320, 91360, 91361, 91362
P	90022, 90040, 90201, 90270
Q	90601, 90602, 90604, 90605, 90606, 90638
R	91303, 91306, 91316, 91335, 91337
S	90056, 90301, 90302, 90303, 90304, 90305, 90310
T	90260, 90277, 90278, 90501, 90503, 90504, 90505
U	90247, 90248, 90249, 90250
V	91321, 91351, 91354, 91355, 91381, 91384, 91390
W	11233, 81321, 98258

Appendix A: Categorization of Zip Codes A to AE

Category	Zip Codes
X	91340, 91344, 91394, 93040, 93063, 93065
Y	91761, 92329, 92371, 92377, 93544
Z	90008, 90043, 90046, 90062, 90069, 91601, 91604
AA	93307, 93501, 93664, 93727, 95334
AB	90710, 90717, 90731, 90744, 90745, 90746
AC	93101, 92240
AD	90063, 91001, 91202, 91206
AE	92840, 92804

Appendix B: Survey for Los Angeles County Animal Care Center Managers and Volunteers

These are interview questions directed at a specific population within Los Angeles County that works in the dog adoption process. Questions are directed at identifying trends of euthanasia and adoption of relinquished dogs. Interviews will be recorded and participants do not have to answer all questions administered or any questions that they are unable or feeling uncomfortable answering.

1. What type of people typically adopt dogs?
2. How would you profile these particular adopters?
3. Do you notice that those who adopt previously relinquished dogs hail from particular households?
4. Do animal shelters focus on appealing to a particular economic demographic? If so, how?
5. How do you get people to adopt dogs for rehoming? Which methods prove to be the most successful?
6. In regard to other animal shelters in your area, do you notice any particular methods they have implemented that improve their pet retention rate?
7. How do you make relinquished dogs more appealing to those who prefer to adopt a stray dog?
8. Are there various strategies to make previously relinquished dogs that have given up for different reasons? For example, is there different emphasis placed upon certain traits of a

dog given up for behavioral reasons compared to the traits marketed of a dog relinquished for not fitting a person's lifestyle?

9. When looking at the reasons for relinquishment, including behavioral problems, not fitting in with the owner's lifestyle, allergies, etc., do you notice that adopters prefer to adopt dogs that were relinquished due to behavioral problems, lifestyle complications, etc.?
10. Do you use a survey to match owners with their dogs? How accurate does your survey work/how do you match owners with relinquished dogs?
11. With respect to owner surrendered dogs, do you notice pet retention trends when compared to the general pet population within your animal shelter?