

Article

Nonprofit Shelter Finances and Live Release Rates: 97 Dogs, 45 Kennels

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Abstract

Rationale: This research explores the connections between shelter and rescue revenues and expenses and live release outcomes, specifically focusing on the implications of a nonprofit having a government contract to provide animal control and welfare services. **Methods:** Two data sources were used for the project: nonprofit 1990s as reported to the Internal Revenue Service (for financial data) and live release data from Shelter Animals Count (to measure shelter outcomes). The project focuses on financing for nonprofit shelters and rescues and 252 organizations from the Shelter Animals Count database, classified as nonprofits with and without government contracts, were used in the analysis. Data on revenue and expenditures were pulled from the nonprofit 990s using the GuideStar website. **Results:** Two variables—relinquishment rate and diversification of revenue—account for 40% of the variation in live release rates. Organizations with greater diversification of revenue have significantly higher live release rates and those with higher numbers of relinquished animals have lower ones. **Conclusions:** The study concludes that: a more even distribution of revenue between donations, programs, and government contracts for service is related to better outcomes; it is not so much whether a shelter or rescue has a government contract, but the portion of its revenue provided by the contract that is related to live release rates; and, overall, there are few significant relationships between revenue, expenditures, and outcomes.

Keywords: animal shelter finances; nonprofit shelter finances; live outcomes; animal welfare

1. Introduction

It is now commonplace to begin any article about animal shelters with a discussion of the serious stress they are increasingly under: too many animals, too little space, more relinquishments, staff and volunteer turnover, too many noses in for the number going out, the reality of euthanasia, and the challenges of raising revenue to provide critical animal welfare services [1–4]. The recently released Annual Report from Shelter Animals Count found that although dog and cat intakes from all sources (owner relinquishments, strays brought in by animal control or members of the public, transfers from other organizations) totaled 5.8 million, a decrease of 2% compared to 2024, non-live outcomes reached 757,000 animals (roughly the same as the previous year) [5]. Transfers into shelters and rescues, meaning that animals are being accepted from other shelters or rescues that may be overcrowded, increased 3% compared to 2024 (1.3 million animals), while transfers out decreased by 1% (906,000) animals [5]. Transfers involve moving animals from organization to organization rather than being adopted or returned to owners; the percentage transferred out means that animals have left the reporting organization and have been accepted by a receiving



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shelter or rescue. Government shelters are the primary source of transfers out, and rescues absorbed the majority of transfers in [5]. Typically, a shelter implies that the organization has an actual physical location which houses animals. Rescues are often foster-based, which means that they keep animals in volunteers' homes; rescues tend to obtain their animals by "pulling" them out of shelters—in other words on a transfer from the shelter to the rescue [6]. Stressed municipal shelters are having greater difficulty sending their animals to other organizations when they reach capacity, often because foster-based rescues can only accept animals that they have a foster home for [5]. More concerning is that a total of 900,000 animals have entered and stayed at shelters since January of 2021, leading to a surplus of animals regardless of adoption rates [7].

While the challenges are well-documented, there is little research on the potential connections between nonprofit revenue streams and outcomes and almost no work that focuses specifically on animal shelters and rescues. This research explores the connections between shelter and rescue revenues and expenses and live release outcomes, specifically focusing on the implications of a nonprofit having a government contract to provide animal control and welfare services. Nonprofit animal shelters with municipal contracts—typically with a city or county—generally must accept all animals from the particular geographic area covered by the contract [6]. There are costs and benefits to such contracts. On the one hand they provide extra revenue to the organization in addition to donations, grants, and program fees. On the other, they may well increase intake numbers, limit the types of programs shelters can provide, and change the nature of the animals in the shelter. This dilemma is aptly summarized by the sign outside of a nonprofit shelter which recently negotiated a contract with its county: 97 dogs, 45 kennels.

Specifically, four research questions are addressed:

- Are shelter and rescue revenues and expenditures correlated with outcomes for animals?
- Is there a relationship between the presence or size of a government contract to provide animal welfare services and outcomes?
- Are there particular patterns of revenue and expenditures that are more strongly related to positive outcomes for animals?
- Do the relationships between finances and outcomes vary depending on the measure of success used?

There is a dearth of research on possible connections between animal shelter finances and outcomes for animals and indeed little is known about the relationship between nonprofit revenue and outcomes generally.

1.1. Nonprofit Revenues and Outcomes

Most extant research has examined connections between different aspects of an organization's finances (overhead costs, revenue diversification, the extent of reliance on donations) or the relationship between revenue and service outputs [8–10]. This is the case for several reasons, the most important being the lack of data on nonprofit outcomes leading researchers and practitioners to use financial indicators as proxies [11,12]. Outputs are the direct results of the activities of an organization. For example, for arts nonprofits outputs have been measured as the number of events held or attendance at events [10,11]. Outcomes are the longer-term result of spending in terms of organizational purposes and goals. In the case of animal shelters and rescues an output might be the number of visitors to the shelter or how many off-site adoption events are held. The primary measure of the purpose or outcome of shelter activities is live release or euthanasia rates [5–7].

Overhead costs have been used as proxy measures of "success" in nonprofits. However, the lower overhead costs desired by stakeholders and funders may actually limit an

organization's ability to realize goals [8,10]. This can set up a "starvation cycle" where higher overheads begin to limit future donations and grants [9]. Further, it has been suggested that the relationship between overhead costs and outputs is curvilinear; increasing overhead can increase outputs up to an optimal point at which outputs can decrease with more spending [10].

Other research has suggested that diversification of revenue sources can decrease nonprofits' financial vulnerability, leading to greater stability, and presumably enhancing outputs [13]. A study of housing construction provided by Habitat for Humanity found that diversification increased organizational outputs, i.e., homes constructed [12]. Greater revenue diversification also appears to increase nonprofit managers' perceptions of mission performance [14]. Arts and culture nonprofits have been found to have increased outputs (event attendance) if their revenue streams are more diversified and if they rely on donations to a lesser extent [11]. Overall, while there are many studies that examine the impact of diversification on nonprofit financial health, little work has been done on its effects on achieving organizational missions, i.e., the outcomes of their work [14].

The relationship between funding and animal shelter outcomes is often assumed but not proven by empirical data. Indeed, the limited research on the relationship between finances and live release rates found no significant correlations between expenses, numbers of staff and volunteers, the extent of veterinary services, and capacity for animals, although overall budget is related to perceived success [6,15].

1.2. Shelter Traits and Animal Outcomes

There are important differences in the funding models for nonprofit animal welfare organizations of different types which may affect the relationship between finances and outcomes. Nonprofits with government contracts to provide services may become reliant on those revenues and thus may experience a power imbalance with diminished independence in achieving their missions [16]. Government funding often comes with strings attached and balancing contract revenue with donations or program revenue can make nonprofits more independent in conducting programs that meet mission goals as defined by shelter leadership [14].

Municipal contracts have been found to be single-edged swords that place greater burdens on shelters in terms of open intake, without providing necessary revenue [6,17]. Nonprofit shelters with government contracts appear to have distinctive revenue profiles with lower percentages coming from donations, adoption fees, fundraising, and merchandise sales [6,17]. This lack of diversification may lead to decreased outputs and outcomes. However, previous research found shelter budgets to be correlated with only one output measure; higher budgets are related to more opportunities for dogs to have shelter breaks in the form of foster care or day trips [6]. And, while larger budgets allow for more staff and volunteers, how revenue is spent may be more important than the simple fact of a larger budget in relation to save rates [6]. Save rates refer to the animals that have left the shelter with a live outcome: return to owners, adoption, trapped neutered and returned to a feral colony, or transferred to another shelter or rescue [6].

Type of shelter (municipal, nonprofit, nonprofit with contract) appears to affect outcomes such as adoption or euthanasia [6]. However, some of the differences in save rates for organizations of different types may lie in how animals arrive. Scholars have examined the nature of animals coming into municipal animal shelters versus humane societies and "open" versus "limited" intake shelters [17,18]. Many animals at municipal animal control shelters are brought in by an animal control officer [18]. They tend to be more costly to the shelter because they stay longer and are more likely to be euthanized [17]. They may be less socialized and thus could not be recovered by a member of the public, were let go by

owners because of behavioral issues, have developed undesirable behaviors during their time on the street, or have more significant health concerns [17].

Further, municipal shelters and nonprofits with municipal contracts are less likely to accept animals on transfer from other organizations [19,20]. They must accept all animals from their service areas and thus cannot manage their intake to match capacity, leaving them little room to accept animals from other shelters. This may lead to higher euthanasia rates [6,20,21].

1.3. Shelter Policies and Outcomes

There are a number of reasons why there might not be a straight-line relationship between shelter finances and outcomes. Reducing spending for staff and volunteer training could lead to turnover which could increase costs further down the line and might impair an organization's ability to provide animal enrichment leading to lower live release rates [22]. Enrichment for the animals in shelter or rescue situations would include socialization with humans and other animals and behavior training which make animals more likely to be adopted [6]. It could also include more walks and time in play groups for dogs, which can reduce the chances of kennel neuroses [23,24]. More importantly, internal policies, programs, and activities can have a significant impact on outcomes quite apart from finances [1,6].

Research has found that shelters that have reduced euthanasia rates over time provide more services at the time of adoption (information about the new pet, investments in the animal in terms of medical care and microchipping), have robust transfer programs to both send and receive animals, and do not identify breed when animals are admitted or made available for adoption [6]. Shelters that have higher live release rates also make greater use of volunteers for foster care and other hands-on animal care, training, and enrichment [6]. Increased enrichment for dogs and cats is associated with lower euthanasia rates [6] as are active foster programs and the use of matching programs to ensure the best fit between adopter and animal [1,6].

2. Materials and Methods

Data Sources and Analysis

The outcome data as described below were drawn from the Shelter Animals Count (SAC) database which was established in 2011. This is a voluntary self-reporting system for shelters and rescues in the US. A matrix based on the Asilomar Accords is used in the reporting system and includes what the founding organizations determined to be the minimum data points shelters and rescues should gather. The Asilomar Accords were developed in August 2004 to highlight the shared mission of animal welfare groups in the United States. One of the guiding principles was “full and open” cooperation among organizations and the public in collecting and sharing animal sheltering data and statistics [25]. The data for this analysis were drawn from a larger study and primarily cover the 2020 reporting year [1].

In 2019 the SAC database included 2269 organizations. Entries were sorted by Federal Tax Identification number and reporting month. Organizations that reported in six or fewer months were excluded. A systematic sample was drawn from the remaining organizations (1400) by selecting every fourth organization from a list ordered by tax identification number, yielding 350 organizations. Because this project focuses on financing for nonprofit shelters and rescues, only the 252 organizations classified as nonprofits, with and without government contracts, were used in the analysis.

Data on revenue and expenditures were pulled from the nonprofit 990s using the GuideStar website, which gathers and disseminates information on all IRS-registered nonprofits (<https://www.guidestar.org>). IRS 990 returns have been found to be valid

measures of nonprofit financial information [11]. The 990 data were primarily drawn for 2019 and 2020, the dates closest to the SAC data that were available for most organizations. There is some variability in the years of the 990s available from GuideStar: 71% of the 990s were from 2020, 27% from 2019, and 1% each from 2017 and 2018. Eighty-four percent of the nonprofit shelters and rescues filed a full 990 (required of organizations that gross at least \$200,000 in a year), 8% a 990EZ (a shorter reporting form for those with gross income over \$50,000), 2% a 990N (a postcard reporting form for organizations with revenue of less than \$50,000), and 1% a 990PF (reporting form for tax exempt private foundations). It should be noted that organizations grossing less than \$200,000 per year may not have a brick-and-mortar shelter or paid employees (although the data indicate that only 17 have no staff). This may bias the results towards larger and more resourced organizations. While foster-based organizations without a physical shelter may have different financial needs, most importantly because they do not have to support a building, they are included in the analysis because they make up 15% of animal welfare organizations [26].

There are several other limitations to the 990 data for animal shelters and rescues. First, while the study breaks out shelters with and without contracts and the monetary value of the contract, the 990 data do not allow for identifying whether the contract is for animal sheltering or enforcement/control. Sheltering would include activities that relate to the care of and enrichment for the animals. Enforcement of municipal animal control ordinances for licensing and roaming animals and policing of animal cruelty would fall under enforcement. Further, the same city or county could have two separate organizations addressing these issues. These differences are important but not measurable in the 990 data. Second, contracts can shift the goals of the organization (as discussed later); specifically, a government contract may stipulate goals other than live release such as spay/neuter programs, humane education, and “return to field” or “trap-neuter-return” programs for cats [27]. The nature of the contracts is not included in the 990 data.

Using SPSS version 27, correlation and regression analyses were used to answer the research questions. First, bivariate correlations between nonprofit shelter and rescue financials and outcomes were explored using Pearson correlations and a two-tailed significance level of at least 0.05. The Pearson correlation is appropriate when variables are measured at the interval level which is the case with the data employed here. Missing cases were excluded pairwise. In the case of nominal level data such as type of organization, chi squares were employed to assess relationships. Because the χ^2 does not indicate the directions of relationships, bivariate tables were examined to determine the nature of the correlations. Following the bivariate analyses, ordinary least squares regressions were run with the two outcome indicators as the dependent variables and all of the finance indicators significantly correlated with them in bivariate analysis as the independent variables. The primary goal of OLS is to find the line that minimizes the sum of squared residuals (errors) between the observed data points and the predicted values. For the OLS, the enter method was used.

3. Results

3.1. Outcome Indicators

As noted previously, “success” indicators for nonprofit organizations have tended to focus on either financial soundness or outputs (like number of or attendance at events) and there have been consistent calls for studies that use measures of outcomes or mission success as the dependent variables [8,11]. For shelters and rescues, the most important mission-based outcomes relate to saving animals. The two measures of shelter outcomes employed here are: the ASPCA Live Release Rate (ASPCA LRR) and save rate. Using both of these indicators addresses individual shortcomings but also allows for examination

of whether there are differences in the impact of financial variables depending on the definition of success.

The ASPCA LRR is calculated by dividing live outcomes (return to owner, adoptions, transfer out, return to field) by admissions (shelter/rescue intake). The rate thus measures activity related to the impact of animals admitted and the number of live outcomes. The number of animals admitted to an agency will affect the resources available for life-saving programs [28]. For an organization to achieve higher save rates using this measure, animals must physically leave the shelter. The major shortcoming of this indicator is that it does not assess how live outcomes compare to all outcomes (owner requested euthanasia for example).

Save (or not euthanized) rates are calculated as intake minus euthanasia outcomes divided by intake, thus comparing live to non-live outcomes, which addresses a shortcoming of the ASPCA LRR. However, “this formula is based on the assumption that an animal saved is an animal not euthanized. . . animals admitted to a shelter and housed for years without a live outcome are saved according to this formula” [28:6]. This means that it is not as important that an animal leaves the shelter; rather, the critical issue is whether it is alive at the end of the reporting year.

While the ASPCA recommends their calculation for live release rate in an effort to standardize reporting, much of the difference between the two measures may lie in the purpose or goals of the particular shelter or rescue. An animal sanctuary that is designed to care for animals for life would have higher live release (or save) rates, i.e., animals not euthanized, but lower ASPCA LRRs because animals have not left. And, it should be noted that a limitation of the measure is that it does not account for the care received from the organization or their overall welfare. A cat rescue or sanctuary that specializes in animals with feline leukemia or cats that have both FIV and FELV might have no animals leaving for adoption, returned to owners, or transferred to another shelter, leading to a very low ASPCA LRR; however, the rate of cats not euthanized is likely to be high.

Table 1 shows descriptive data for the two outcome measures. The mean live release rate for organizations in the sample is 93% with the ASPCA indicator at just over 100%. This illustrates a shortcoming of how shelter and rescue data are collected. Organizations are asked to report data on intakes and euthanasia for an annual period. However, animals in the shelter at the beginning of the period in January were likely counted as an intake in the previous year. As a result, live release rates calculated based on intake could easily show that over 100% of the animals in the shelter had a live release as is the case here with the ASPCA live release measure. Similarly, a sanctuary could not have admitted any animals in the reporting year but had medical euthanasia of animals already in the rescue, accounting for over 100% of intakes being euthanized.

Table 1. Shelter/Rescue Live Release Descriptive Statistics.

	Minimum	Maximum	Mean	Standard Deviation
Live Release Rate	−1.28	1.00	0.93	0.18
ASPCA Live Release Rate	0.00	5.52	1.05	0.48

N = 252.

3.2. Financial Indicators

The financial indicators collected from the 990s include both revenues (donations/contributions, program revenue, municipal contracts for service, total revenue) and expenditures (kennel expenses, medical expenses, spay/neuter expenses, salaries). The numbers of staff and volunteers were also collected for the 84% of organizations that filed a full 990 (this item is not included on the 990EZ or postcard). Diversification of revenue

was calculated as the squared sum of the share of each revenue category [11]. The resulting score varies from 1 (revenue comes from only one source) to 0 (revenue comes equally from multiple sources). Thus, a lower score on the index represents a more diversified revenue stream. Diversification indexes were calculated using all three revenue sources (donations, program revenue, government contract) and only two sources (donations, program revenue) because many of the organizations did not have a municipal contract to provide animal welfare services. Salaries to expenses are used to indicate overhead costs. Donation share of total expenses indicates the extent to which the nonprofit is “donative” as opposed to being a “commercial nonprofit” [10,11,29].

Table 2 presents descriptive data on the financial attributes of the organizations in the sample. The mean share of income from contributions and donations is 65% suggesting that most of the nonprofits in the sample are donative with over half of their revenue coming from donations [13,29]. The shares of program revenues and municipal contracts are almost identical at 24% and 22%, respectively. The mean diversification scores measuring three (contributions/donations, program revenue, government contract) and two (donations, program revenue) sources of revenue are well above zero, suggesting that revenue is not particularly diversified for these nonprofits, not surprising given the high average percent of revenue accruing from donations.

Table 2. Descriptive Statistics, Financial Variables.

	Minimum	Maximum	Mean	Standard Deviation
Donation share of total revenue	0.04	1.31	0.65	0.22
Program share of total revenue	0.00	0.92	0.24	0.20
Contract share of total revenue	0.00	0.78	0.22	0.19
Diversification of revenue, 3 sources	0.81	2.57	1.38	0.40
Diversification of revenue, 2 sources	0.30	1.87	1.14	0.26
#Staff	00	937	52	102
#Volunteers	00	3900	232	442
\$Total revenue	\$42,623	\$125,326,390	\$3,033,280	\$10,692,022
\$Contributions/donations	\$28,985	\$120,675,384	\$1,987,510	\$8,264,263
\$Municipal contract	\$4450	\$399,534	\$399,534	\$636,861
\$Program revenue	0	\$6,942,787	\$795,419	\$4,607,197
\$Total expenses	\$37,398	\$103,177,874	\$2,490,151	\$9,106,208
\$Salary expenses	0	\$56,623,033	\$1,427,871	\$5,363,215
Ratio of salaries to expenses	0	0.74	0.48	0.18
\$Kennel expenses	0	\$28,102,375	\$1,227,955	\$2,791,656
\$Medical expenses	\$4163	\$65,773,441	\$2,717,175	\$11,229,463
\$Spay/neuter expenses	\$1714	\$5,296,073	\$571,486	\$923,806
Kennel expense share of total expenses	0	8.02	0.72	0.58
Medical expense share of total expenses	0.03	0.99	0.27	0.27
Spay/neuter expense share of total expenses	0.01	1.00	0.20	0.18
\$Total medical expenses	\$8000	\$1,871,443	\$837,029	\$764,732
Total medical share of total expenses	0.11	0.76	0.32	0.19

N = 252.

There is wide variation in the number of staff and volunteers at the organizations. Numbers of staff range from 0 to 937 and the number of volunteers from 0 to 3900. The mean numbers of staff and volunteers are 52 and 232, respectively. The range of human resources has been found in other research on animal shelters [6].

Total revenue ranges from just over forty thousand dollars to over 100 million, illustrating, along with a high standard deviation, the very wide financial capacity differences among nonprofit shelters and rescues. The mean total revenue for the organizations in the sample is \$3,033,280. For organizations that have a government contract to provide services, the mean revenue from the contract is just over \$600,000. Total expenses range from just under forty thousand dollars annually to just over a million; mean total expenditures are \$2,490,151. Data were collected on kennel, medical, and spay/neuter expenses; however, organizations were inconsistent in whether they broke out the two types of medical expenses. For this reason the two medical categories were summed as total medical expenses. On average nonprofits in the sample spend the largest portion of revenue on kennel expenses, 72% (including adoption activities and programs), with 32% of revenue spent on medical issues (expenses total over 100% due to rounding).

3.3. Shelter Statistics

Of the 252 organizations in the sample, 66% are nonprofits without government contracts while the remaining 34% have a county or municipal contract to provide animal welfare services. Table 3 provides descriptive data drawn from the Shelter Animals Count database on how animals come into shelters and how they leave. The organizations vary considerably in the numbers of animals they accept each year from under one to 1711; the mean number of animals received is 142. The mean adoption rate is 81% with the euthanasia rate at 7%, echoing the relatively high save rates among the organizations in the sample. Based on the 2024 Shelter Animals Count report, the average national adoption rate for dogs was 57% and for cats 64% [5]. Nine percent of animals were returned to their owners on average with another 12% transferred to another shelter or rescue. They were more likely to arrive as strays followed by relinquishments and animals transferred from other organizations.

Table 3. Characteristics of the Organizations in the Sample.

	Minimum	Maximum	Mean	Standard Deviation
Total animal intake	0.17	1711	142	197
Stray share of total intake	0.00	2.00	0.88	0.56
Relinquishment share of total intake	0.00	1.95	0.64	0.38
Transfer in share of total intake	0.00	1.95	0.46	0.48
Adopted rate	0.00	4.23	0.81	0.39
Euthanized rate	0.00	2.28	0.07	0.18
Returned to owner rate	0.00	0.62	0.09	0.11
Transferred out rate	0.00	4.5	0.12	0.33

N = 252.

3.4. Correlation Analysis

Table 4 presents the Pearson correlations between revenue, expenses, and shelter statistics and the two outcome variables. Overall, there are fewer significant correlations between financial and outcome variables than between other aspects of shelter operations

and outcomes. For the ASPCA LRR, only having a larger share of revenue from donations is significantly related to better outcomes ($p = 0.05$).

Table 4. Pearson Correlations and Chi Squares, Financial Conditions of Organizations and Outcomes.

	Save Rate	ASPCA Live Release Rate
Revenue		
Total revenue	0.00	−0.05
Donation revenue	0.01	−0.04
Donation share of total revenue	0.01	0.13 *
Program revenue	−0.02	−0.03
Program share of total revenue	0.00	−0.02
Contract share of total revenue	−0.26 *	−0.07
Diversification of revenue, 3 sources	−0.26 *	−0.05
Diversification of revenue, 2 sources	0.00	0.08
Donative, >50% of revenue from donations	0.01	0.06
Overhead		
#Staff	0.00	−0.06
#Volunteers	0.04	−0.07
Ratio of staff to volunteers	0.07	−0.01
Salaries	−0.01	−0.04
Ratio of salaries to expenses	−0.04	0.01
Expenses		
Total expenses	0.00	−0.04
Medical expenses	−0.24	−0.06
Kennel expenses	0.01	−0.07
Spay/neuter expenses	0.07	0.09
Total medical expenses	−0.08	0.63 **
Kennel share of total expenses	−0.03	−0.01
Medical share of total expenses	−0.06	0.08
Spay/neuter share of total expenses	0.06	0.11
Medical and spay/neuter share of total expenses	0.19	−0.34
Ratio expenses to revenue	−0.01	0.07
Shelter statistics		
Ratio revenue to intake	−0.23 **	−0.06
Ratio expenses to intake	−0.17 *	−0.04
Ratio staff to intake	−0.26 **	0.06
Nonprofit w/contract ^	18.20 ** (positive)	0.45
Nonprofit no contract ^	18.20 ** (negative)	0.45
Total intake	−0.06	−0.14 **
Stray intake rate	−0.06	−0.17 **
Relinquishment rate	−0.17 *	0.06
Transfer in rate	0.21 **	0.16 *

N = 252, * = significant at 0.05, ** = significant at 0.01. ^ = chi square.

The share of revenue from a municipal contract is significantly and negatively correlated with live release rate ($p = 0.05$). A greater diversification of revenue between donations, contracts, and programs is significantly correlated with higher live release rates (remembering that a lower score represents more diversification, $p = 0.05$).

None of the indicators of overhead costs are significantly related to outcomes. Only one expense category is significantly related to the ASPCA LRR; higher expenses for medical care and spay/neuter programs are associated with higher live release rates using this measure ($p = 0.05$). There are no significant correlations between expenditure variables and the other live release rate indicator.

Attributes of shelters including the nature of their intake of animals are more consistently related to outcomes. For the ASPCA LRR, higher intake rates ($p = 0.01$) and stray intakes in particular ($p = 0.01$) are significantly correlated with lower live release rates. Transfer activity is significantly correlated with higher live release using both indicators ($p = 0.05$ for ASPCA LRR and $p = 0.01$ for save rate).

The save rate measure representing animals “not euthanized” is related to a number of shelter statistics. Live releases under this definition are higher in nonprofits that do not have a municipal contract ($p = 0.01$). Live release rates are significantly lower where revenue and expense ratios are higher ($p = 0.01$). Having more relinquished animals is negatively correlated ($p = 0.05$) with live release but having more animals coming via transfer from another shelter is significantly correlated with higher live release rates ($p = 0.01$).

3.5. Regression Analysis

Regression analyses were run with the two outcome measures as the dependent variables and all of the independent variables that were significantly correlated with them in the bivariate analysis to assess which variables remained significantly correlated holding others constant. Table 5 provides the results of the regression with save rate (not euthanized) as the dependent variable. There is very high multicollinearity based on the variation inflation factors for two of the independent variables: contract share and diversification between the three sources of revenue, one of which is contract revenue. To address this, contract share was removed from the equation and only diversification was used. The more parsimonious model in Table 6 has been reduced to include only those variables that remain significantly correlated with save rate in multiple regression.

Table 5. Full OLS Regression Results with Save Rate as the Dependent Variable.

Variable	Unstandardized B	Standard Error	Beta	t	Significance	VIF
Contract share of total revenue	−0.49	0.62	−0.35	−0.79	0.43	22.03
Diversification of revenue, 3 sources	0.07	0.30	0.10	0.23	0.82	21.04
Revenue by intake	4.417×10^{-6}	0.00	0.21	0.82	0.41	7.19
Expenses by intake	-5.043×10^{-6}	0.00	−0.21	−0.88	0.38	6.74
Nonprofit w/o contract	0.07	0.13	0.05	0.53	0.60	1.08
Relinquishment rate	−0.56	0.09	−0.61	−6.33	0.00	1.07
Transfer in rate	0.03	0.09	0.03	0.31	0.76	1.22
Constant	1.20	0.27		4.38	0.00	
Adjusted $R^2 = 0.37$						

Two variables—relinquishment rate and diversification of revenue—account for 40% of the variation in live release rates. Organizations with greater diversification of revenue have significantly higher live release rates and those with higher numbers of relinquished

animals have lower ones. Of these variables, relinquishment rate is the better predictor of live release based on the beta values. The reduced regression was also run with contract share rather than diversification with similar results. Having a government contract to provide animal welfare services significantly reduces save rates (Table 7).

Table 6. Reduced OLS Regression Results with Save Rate as the Dependent Variable and Diversification Included as an Independent Variable.

Variable	Unstandardized B	Standard Error	Beta	t	Significance	VIF
Diversification of revenue, 3 sources	−0.19	0.06	−0.28	−3.03	0.00	1.00
Relinquishment rate	−0.54	0.08	−0.59	−6.46	0.00	1.00
Constant	1.45	0.10		14.13	0.00	
Adjusted R ² = 0.40						

Table 7. Reduced OLS Regression Results with Save Rate as the Dependent Variable and Contract Share Included as an Independent Variable.

Variable	Unstandardized B	Standard Error	Beta	t	Significance	VIF
Contract share of total revenue	−0.41	0.13	0.29	−3.19	0.00	1.00
Relinquishment rate	−0.55	0.08	−0.60	−6.59	0.00	1.00
Constant	1.28	0.06		21.01	0.00	
Adjusted R ² = 0.41						

Table 8 provides the regression results with the ASPCA LRR as the dependent variable using all of the variables significantly correlated with it in bivariate analysis. First, none of the variables remain significantly correlated with live release measured in this way in multiple regression, and only 1% of the variation is accounted for. However, several of the independent variables have relatively high VIF, suggesting some multicollinearity in the model. The reduced regression results are shown in Table 9. Here only two variables remain significantly correlated with ASPCA LRR; organizations that have higher intakes have significantly lower live release rates while those with more animals transferred in have higher ones. These variables account for just 5% of the variation in live releases using the ASPCA measure with total intake being the stronger predictor based on the beta values.

Table 8. Full OLS Regression Results with ASPCA Live Release Rate as the Dependent Variable.

Variable	Unstandardized B	Standard Error	Beta	t	Significance	VIF
Donation share of total revenue	0.06	0.35	0.10	0.17	0.87	3.61
Medical total expenses	−0.03	0.28	−0.04	−0.13	0.91	1.22
Total intake	0.00	0.00	0.15	0.41	0.70	1.31
Stray intake rate	−0.17	0.26	−0.43	−0.64	0.55	4.51
Transfer in rate	0.12	0.12	0.41	0.97	0.38	1.78
Constant	0.91	0.16		5.55	0.00	
Adjusted R ² = 0.01						

Table 9. Reduced OLS Regression Results with ASPCA Live Release Rate as the Dependent Variable.

Variable	Unstandardized B	Standard Error	Beta	t	Significance	VIF
Transfer in rate	0.17	0.06	0.18	2.66	0.01	1.01
Total intake	0.00	0.00	−0.17	−2.51	0.01	1.01
Constant	1.03	0.05		21.94	0.00	
Adjusted R ² = 0.05						

4. Discussion

The discussion of results is organized by the four research questions addressed in this analysis.

4.1. *Are Shelter and Rescue Revenues Correlated with Outcomes for Animals?*

The only financial variable that remains significantly correlated with outcomes in multiple regression is diversification of revenue, which is related to the live release or “not euthanized” rate indicator. A more even distribution of revenue between donations, programs, and government contracts is related to better outcomes. However, even in this case having more relinquished animals is the better predictor of outcomes. It is not clear why higher relinquishment rates should be related to more euthanasia and the extant literature provides little guidance [6,19,21]. One possibility may lie in how relinquishments are recorded by shelters and rescues. For example, high relinquishment rates could be indicative of higher return rates if a shelter is counting the return of an adopted animal as an additional relinquishment. In this case it may be that the animals have behaviors which make additional adoptions more difficult. Other research has suggested that more returns are associated with higher euthanasia rates [2,30]. On the other hand, research has also found higher stray intakes to be related to euthanasia [17–19] which does not seem to be the case for these organizations based on the multiple regression results, although there was a significant and negative correlation in bivariate analysis. It should also be remembered that all of the organizations in this study are nonprofits while previous research included municipal shelters, which tend to have larger stray intakes since they must accept all animals from a particular geographic area.

4.2. *Is There a Relationship Between the Presence or Size of a Government Contract to Provide Animal Welfare Services and Outcomes?*

Nonprofit shelters that have government contracts appear to have poorer outcomes. In bivariate analysis these organizations had significantly lower live release rates. However, this relationship did not hold up in multiple regression. Only contract share of total revenue remained significant and negatively correlated with save rates. Thus, it appears that it is not so much whether a shelter or rescue has a government contract, but the portion of its revenue provided by the contract that is related to outcomes. This is consistent with the positive relationship between diversification of revenue sources and higher save rates. It is logical that organizations with larger proportions of their budgets coming from contracts will be more beholden to the goals of a municipality, which might emphasize efficiency over effectiveness. In other words, municipal goals may emphasize the ability to house more animals or bring in more strays at the lowest cost, which could lead to overcrowding as was the case in the situation described in the title. The animal welfare goals of the shelter or rescue may relate to the welfare of animals while they are there and ensuring adoptability and the quality of adoptive homes. This may require not taking animals beyond caring capacity, more enrichment in the shelter, and increasing foster homes for example, which likely require greater staff oversight and, of course, are more costly. If shelters and rescues have more own-source revenue from donations, they can afford these extra services, which ultimately improve animal welfare.

4.3. *Are There Particular Patterns of Revenue and Expenditures That Are More Strongly Related to Positive Outcomes for Animals?*

Overall, there are few significant relationships between revenue, expenditures, and outcomes for the nonprofit organizations in the dataset. The composition of a shelter’s intake is more strongly related to live release rates regardless of how they are measured. The exception to this is for shelters and rescues that have contracts. A shelter with a contract

has more positive outcomes if the income from the contract is a smaller share of their total revenue and if they have a more even balance with donations and program revenue. This could be the case for a variety of reasons. First, being reliant on a government contract implies that entities outside the shelter have influence over internal policies and practices, and there may be conflicts when it is time to renegotiate the contract. These may lead the nonprofit to limit activities to only those the municipality is willing to support [6]. Contracts generally require the shelter to accept all animals from a specific geographic area. This means that such shelters will not be able to control either the size or composition of the animal population. They may have to deal with more animals with behavioral issues or those that have suffered abuse [17,18]. This impacts both the numbers of animals that may need to be euthanized for behavioral or health concerns and limits resources for other shelter programs. The significant negative relationship between annual intake and live outcomes supports this reasoning. Other research has also found that shelters with contracts have higher euthanasia rates [6,20,21].

4.4. Do the Relationships Between Finances and Outcomes Vary Depending on the Measure of Success Employed?

There are some differences in the correlates of “success” depending on the outcome indicator used. Based on the regression analysis, the ASPCA indicator does not appear to be as strongly related to revenue or expenses, while the “not euthanized” rate is affected by contract and revenue diversification.

In bivariate analysis, organizations that were more donative had better ASPCA live outcomes, as did those that spent more money on medical and spay/neuter services. The not euthanized rate was lower in organizations that had greater intake to revenues and expenses and a lower intake to employee ratio. Again, the main difference in the two measures is whether animals staying with the organization are considered to be a “live release.” The not euthanized rate is more sensitive to organizational finances perhaps because animals are staying in the shelter longer and thus requiring greater resources. The ASPCA indicator that is explicitly considering noses in relative to noses out is not as strongly related to revenue and expenses. Another difference is the significant and negative correlation between relinquishment and the not euthanized rate. The ASPCA indicator is more strongly related to total intake generally and stray intake specifically. It is logical that the ASPCA indicator would be sensitive to the total number of animals arriving at the shelter as well as the portion that are strays that might have behaviors that are more challenging for adopters or for other shelters [17,18]. It is not clear why the not euthanized rate would be significantly related to the proportion of animals arriving as relinquishments; some research has suggested that they may have more preexisting behavioral issues while other work has found that many relinquishments are more about the human’s circumstances and knowledge than pet behavior [31,32]. Higher relinquishment intake could also add to shelter space constraints leading to more euthanasia. However, intake of owner surrendered animals is typically discretionary for most shelters with many now using wait lists also known as managed intake, so just this outcome can be avoided or at least managed [33].

4.5. Implications for Shelter Policy

While this research has not evaluated specific policies regarding contracts and non-profit shelters, the findings raise several issues that shelter and rescue leaders could consider. Careful cost benefit analyses should be conducted prior to accepting or renewing a municipal contract to fully consider whether the additional revenue emanating from it is sufficient to cover the likely increase in intakes. This would include capacity, staffing and volunteer requirements, medical expenditures, and potential impacts on quality of life for animals

in the shelter. Ensuring that there is sufficient own-source revenue in terms of grants or donations to offset the impacts of the contract is necessary. If other welfare organizations have had the contract in the past and are having difficulty negotiating a new one that fully covers costs, it is unlikely that undercutting their bid is going to be advantageous for a different shelter. Care should be given to fully understand the goals and expectations of the municipality and ensure that they align with the welfare goals of the organization. For example, a shelter or rescue that has a strong history of “no-kill” (only performing euthanasia due to serious health or behavioral problems rather than space) should think ahead of time about what they are going to do if the expectations for intake exceed their capacity. A plan outlining what happens if capacity is reached or exceeded should be in place. This might include increasing the number of foster homes, cooperative agreements with other welfare organizations, having a robust transfer program with willing receiving organizations in place, or limiting owner surrenders. Finally there are human costs to agreeing to a contract which is likely to increase intake and capacity. Seeing animals in cages and offices around the shelter, or experiencing a diminishment in cleanliness due to animal overcrowding can impact the wellbeing of staff and volunteers and may turn off the public from adopting from the shelter. If the contract ultimately results in increased euthanasia there is the very real concern for compassion fatigue.

5. Limitations and Future Research

While this research contributes to the understanding of the relationship between the finances of nonprofit shelters and rescues and their outcomes and also explores the effects of having a government contract to provide services, there are several limitations. First, the study is cross-sectional and thus causation cannot be fully established. The SAC data are from six years ago and relationships between finances and outcomes could have changed over time. Organizations can also change their funding sources and contract status over time such as the nonprofit with the new contract that has far more dogs than kennels. SAC no longer provides data sets with shelters and rescues individually identified, so older data had to be used. The nonprofits are all within the US, so it is unclear how finances are related to outcomes in shelters in other countries. Finally, there may be differences in how organizations report income and expenses in their 1990s which could have introduced error into the study.

As previously noted, the 990 data do not capture some of the nuances involved in organizations with different types of contracts. Further research, using content analysis, could examine the nature of different types of contracts, specifically, whether they expand shelter services (to include spay/neuter and return to field for example) or limit them (provide funding only for dogs or limit stays). The negotiations behind the contracts would also be interesting to explore. In an effort to spend as little money on animal control and housing as possible, local governments may lowball their offers, creating a situation where the contract increases the burden on shelters without sufficient revenue.

While this study focused on nonprofit organizations to direct attention to the potential impacts of government contracts (and because of data availability using the 990s), future work should also consider relationships between finances and outcomes for municipal shelters. Research could also explore whether nonprofits with municipal contracts more closely resemble municipal or other nonprofit shelters. It would also be interesting to look at differences in outcomes when contracts are for sheltering versus animal control. Additional research is also needed on the role of transfers and organizational cooperation in outcomes.

Although efforts by the ASPCA and SAC have increased the extent and uniformity of reporting, there are still issues with the outcome data and inconsistencies in how they are reported [34]. Research using a small number of organizations where researchers can be certain of how reporting is done would be valuable. The effects of contracts on nonprofits needs more

research. It has been suggested that contracts come with strings or obligations which shift organizations away from activities that directly affect outcomes. This could be examined more carefully. Finally, it would be valuable to model the relationships between finances, programs, and outcomes. It could be that spending for particular shelter programs and activities impacts outcomes, i.e., that spending alone is not as important as the types of activities it funds.

There are several additional limitations to the financial data. First, the financial status of the organizations reflected in the 2020 990s may have been affected by the COVID-19 pandemic over the course of that year and may not represent “normal” income and expenditures. The 990s show both the current and prior year’s financials and there did not appear to be strong fluctuations downward in the 2020 reports. And there were no significant correlations between the year of the 990s and the outcome variables of interest. Second, there are variations in the sizes and budgets of the organizations which may skew results. For example, a small foster-based rescue may not experience the higher expenses of caring for animals in a bricks-and-mortar shelter. The type of reporting form (990 versus 990EZ typically used by home-based rescues) was not correlated to either of the live release rates.

In summary, the findings suggest an absence of strong connections between shelter finances and outcomes in terms of live release and save rates, which conforms to the findings of the very limited work on the topic using a more geographically limited sample [6]. Overall, how animals arrive at shelters and rescues appears more important to their live release than finances. However, for nonprofit shelters with government contracts to provide animal welfare services, if contract revenue is a larger portion of the total, live release rates decrease. This suggests that such contracts may make shelters more dependent on government support, which may change priorities or reduce program activities.

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References

1. Reese, L.A. Community factors and animal shelter outcomes. *J. Appl. Anim. Welf. Sci.* **2024**, *27*, 105–123. [PubMed]
2. Powell, L.; Reinhard, C.; Satriale, D.; Morris, M.; Serpell, J.; Watson, B. Characterizing unsuccessful animal adoptions: Age and breed predict the likelihood of return, reasons for return and post-return outcomes. *Sci. Rep.* **2021**, *11*, 8018. [CrossRef] [PubMed]
3. Leifer, B.D. All Bark, No Bite: The Shortcomings of Tax Expenditures to Remedy the Animal Shelter Crisis. *Boston Coll. Law Rev.* **2026**, *67*, 357. [CrossRef]
4. Protopopova, A.; Gunter, L.M. Adoption and relinquishment interventions at the animal shelter: A review. *Anim. Welf.* **2017**, *26*, 35–48. [CrossRef]
5. Shelter Animals Count Annual Report (2025). Available online: <https://www.shelteranimalscount.org/2025-report/> (accessed on 3 January 2026).
6. Reese, L.A. *Strategies for Successful Animal Shelters*; Elsevier: Amsterdam, The Netherlands, 2018.
7. Shelter Animals Count (2023). SAC Releases 2023 Annual Intake and Outcome Data Analysis—Shelter Animals Count. Available online: <https://www.shelteranimalscount.org/sac-releases-2023-annual-analysis/> (accessed on 28 July 2026).
8. Coupet, J.; Berrett, J.L. Toward a valid approach to nonprofit efficiency measurement. *Nonprofit Manag. Leadersh.* **2019**, *29*, 299–320.
9. Mitchell, G.E.; Calabrese, T.D. Proverbs of nonprofit financial management. *Am. Rev. Public Adm.* **2019**, *49*, 649–661. [CrossRef]
10. Altamimi, H.; Liu, Q. The nonprofit starvation cycle: Does overhead spending really impact program outcomes? *Nonprofit Volunt. Sect. Q.* **2022**, *51*, 1324–1348.
11. Kim, M. The relationship of nonprofits’ financial health to program outcomes: Empirical evidence from nonprofit arts organizations. *Nonprofit Volunt. Sect. Q.* **2017**, *46*, 525–548.

12. Berrett, J.L.; Holliday, B.S. The effect of revenue diversification on output creation in nonprofit organizations: A resource dependence perspective. *Volunt. Int. J. Volunt. Nonprofit Organ.* **2018**, *29*, 1190–1201. [CrossRef]
13. Carroll, D.A.; Stater, K.J. Revenue diversification in nonprofit organizations: Does it lead to financial stability? *J. Public Adm. Res. Theory* **2009**, *19*, 947–966.
14. Hung, C. Restricted revenues and nonprofit service delivery: The roles of financial discretion. *Volunt. Int. J. Volunt. Nonprofit Organ.* **2021**, *32*, 136–150. [CrossRef]
15. Lord, L.K.; Wittum, T.E.; Ferketich, A.K.; Funk, J.A.; Rajala-Schultz, P.; Kauffman, R.M. Demographic trends for animal care and control agencies in Ohio from 1996–2004. *J. Am. Vet. Med. Assoc.* **2006**, *229*, 48–54. [CrossRef] [PubMed]
16. Casciaro, T.; Piskorski, M.J. Power imbalance and interorganizational relations: Resource dependence theory revisited. *Acad. Manag.* **2004**, 1–57. Available online: <https://www.semanticscholar.org/paper/POWER-IMBALANCE-AND-INTERORGANIZATIONAL-RELATIONS%3A-Casciaro/3fc9ab632f6c08ee03dbb61008cfd0f07f432bc> (accessed on 28 July 2026).
17. Notaro, S. Disposition of shelter companion animals from nonhuman animal control officers, citizen finders, and relinquished by caregivers. *J. Appl. Anim. Welf. Sci.* **2004**, *7*, 181–188. [CrossRef] [PubMed]
18. Shore, E.R.; Girrens, K. Characteristics of animals entering an animal control or humane society shelter in a Midwestern city. *J. Appl. Anim. Welf. Sci.* **2001**, *4*, 105–115. [CrossRef] [PubMed]
19. Reese, L.A. Shelter and rescue programmes associated with higher live release and lower return rates for dogs. *Anim. Welf.* **2021**, *30*, 419–430. [CrossRef]
20. Woodruff, K.A.; Smith, D.R. An estimate of the number of dogs in US shelters. In Proceedings of the NAVC Conference Small Animals Edition, Orlando, FL, USA, 4–8 February 2017; Volume 31. Available online: <http://terrierman.com/MSUJ-shelter-study.pdf> (accessed on 9 August 2018).
21. Woodruff, K.; Smith, D.R.; Cain, C.; Loftin, C. The number of dogs entering shelters in five states, and factors that affect their outcomes: A study of the sheltering system. *J. Appl. Anim. Welf. Sci.* **2021**, *24*, 1–15. [CrossRef] [PubMed]
22. Widmar, N.O.; Lord, E.; Litster, A. Sensitivity analysis to aid shelter management decisions: How does altering expenditure affect operational viability? *J. Appl. Anim. Welf. Sci.* **2015**, *18*, 209–221. [CrossRef] [PubMed]
23. Gunter, L.M.; Feuerbacher, E.N.; Gilchrist, R.J.; Wynne, C.D. Evaluating the effects of a temporary fostering program on shelter dog welfare. *PeerJ* **2019**, *7*, e6620. [CrossRef] [PubMed]
24. Thielke, L.E.; Udell, M.A. Characterizing human–dog attachment relationships in foster and shelter environments as a potential mechanism for achieving mutual wellbeing and success. *Animals* **2019**, *10*, 67. [CrossRef] [PubMed]
25. Asilomar Accords | ASPCA. Available online: <https://www.aspcapro.org/about-us/aspcapro-policy-and-position-statements/asilomar-accords> (accessed on 28 July 2026).
26. Available online: https://www.shelteranimalscount.org/wp-content/uploads/National-Trends-in-Foster-Based-Rescue-Operations_FINAL.pdf (accessed on 28 July 2026).
27. Best Friends Animal Society. Humane Animal Control: Effective Enforcement, Shelter Management, Local Government Support and Community Engagement. *Best Friends Animal Society*. 2019. Available online: <https://bestfriends.org/pet-care-resources/humane-animal-control-manual> (accessed on 28 July 2026).
28. National Federation of Humane Societies. What Is Your Rate? Understanding the Asilomar Live Release Rate, ASPCA Live Release Rate and Save Rate. 2011. Available online: https://www.aspcapro.org/sites/default/files/What%20is%20your%20Rate%2010_2013.pdf (accessed on 7 October 2024).
29. Garner, J.L.; Harrison, T.D. Boards, executive excess compensation, and shared power: Evidence from nonprofit firms. *Financ. Rev.* **2013**, *48*, 617–643. [CrossRef]
30. Marston, L.C.; Bennett, P.C.; Coleman, G.J. What happens to shelter dogs? An analysis of data for 1 year from three Australian shelters. *J. Appl. Anim. Welf. Sci.* **2004**, *7*, 27–47. [CrossRef] [PubMed]
31. Kwan, J.Y.; Bain, M.J. Owner attachment and problem behaviors related to relinquishment and training techniques of dogs. *J. Appl. Anim. Welf. Sci.* **2013**, *16*, 168–183. [CrossRef] [PubMed]
32. Jensen, J.B.; Sandøe, P.; Nielsen, S.S. Owner-related reasons matter more than behavioural problems—A study of why owners relinquished dogs and cats to a Danish animal shelter from 1996 to 2017. *Animals* **2020**, *10*, 1064. [CrossRef] [PubMed]
33. Managed Intake or Admissions Training Playbook | Best Friends Animal Society. Available online: <https://bestfriends.org/network/resources-tools/managed-intake-or-admissions-training-playbook> (accessed on 20 July 2026).
34. Horecka, K.; Neal, S. Critical problems for research in animal sheltering, a conceptual analysis. *Front. Vet. Sci.* **2022**, *9*, 804154. [CrossRef] [PubMed]

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