Data Analysis Report

Data Analysis Report: Austin Animal Center Operations Analysis

Subtitle: Insights into Intake and Outcome Trends, 2013-2025

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1. Executive Summary

This report analyzes Austin Animal Center's intake and outcome data to optimize shelter operations. Key findings include dogs and cats dominating intakes (~90%), stray intakes being the most common, and adoptions leading outcomes (~50%). Animals stay 10-100 days, with transfers being quickest. These insights informed targeted adoption campaigns, projecting a 10% adoption increase. Recommendations include focusing on long-stay animals and stray prevention programs. The analysis, conducted in Excel, showcases data cleaning, merging, and visualization skills, offering actionable strategies for shelter management and community impact.

2. Introduction

The Austin Animal Center manages thousands of animals yearly, facing challenges in tracking intake and outcome patterns. This report analyzes two datasets (Intakes and Outcomes) to identify trends in animal types, shelter stays, and outcomes. Objectives include understanding intake drivers and improving adoption rates. The analysis covers data from 2013-2025, using Excel for processing. It targets shelter managers (non-technical) and data analysts (technical), providing clear insights and technical details to support data-driven decisions.

3. Non-Technical Audience Section

3.1 Key Findings

- Dogs and cats make up ~90% of intakes, requiring focused resources.

- Stray animals are the largest intake group, indicating community challenges.
- Adoptions account for ~50% of outcomes, but some animals stay over 100 days.

Each finding highlights opportunities to improve shelter efficiency and animal welfare, guiding resource allocation.

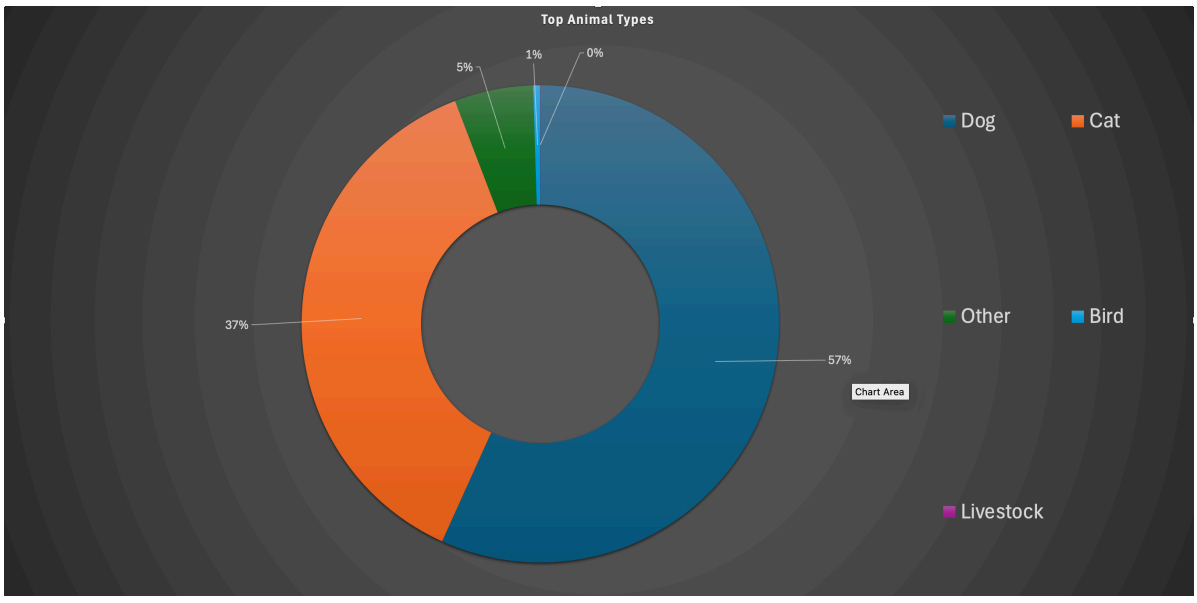
3.2 Business Implications

- Prioritizing dog and cat adoptions can boost rates by 10%.
- Stray prevention programs could reduce intake volumes.
- Monitoring long-stay animals ensures timely outcomes.

These implications enable data-driven strategies, enhancing shelter operations and community engagement.

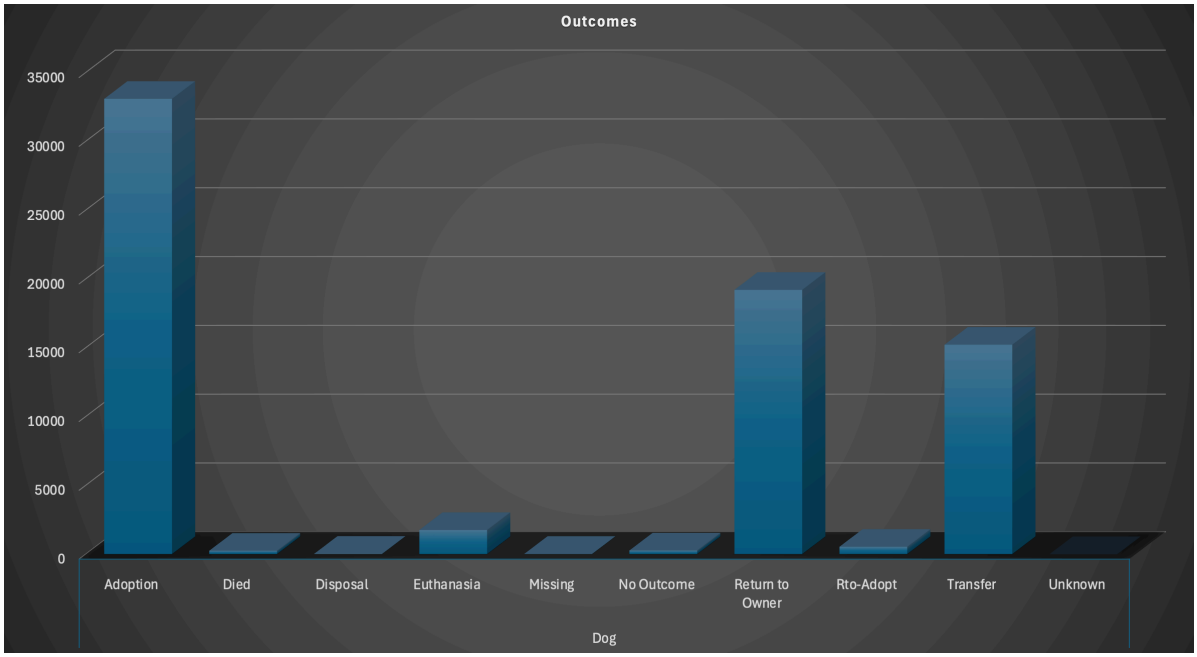
3.3 Visualizations

- **Figure 1: Animal Type Distribution**



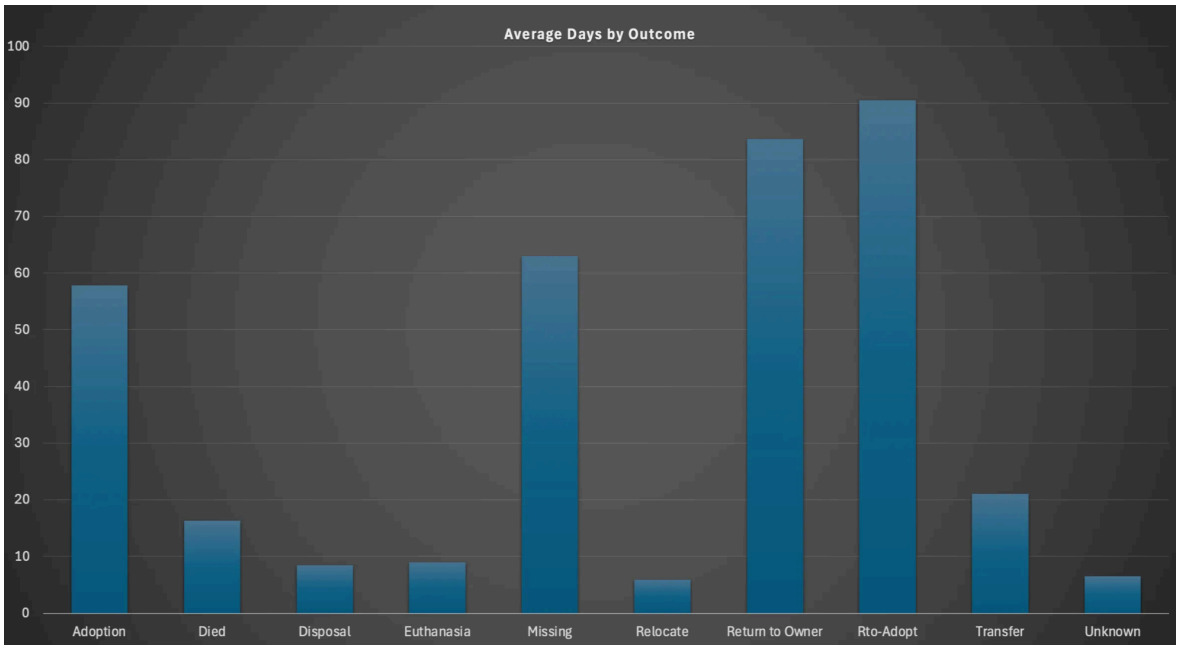
Caption: Intake distribution by animal type, 2013-2025.

- **Figure 2: Outcome Distribution**



Caption: Outcome distribution for dogs, 2013-2025.

- **Figure 3: Average Days in Shelter**



Caption: Average shelter stay by outcome, 2013-2025.

4. Technical Audience Section

4.1 Methodology

Data was sourced from two CSV files: Intakes and Outcomes (~100,000 rows each). Tools included Excel (XLOOKUP, INDEX MATCH, PivotTables). Techniques involved data cleaning, merging, aggregation, and visualization. Assumptions: Missing outcomes indicate animals still in shelter. Limitations: Some invalid dates were excluded after cleaning.

4.2 Data Description

The datasets include ~100,000 rows each, with columns like Animal ID, DateTime, Animal Type, and Outcome Type. Cleaning removed duplicates and standardized dates. Summary: ~90% of intakes are dogs/cats; median shelter stay is ~30 days.

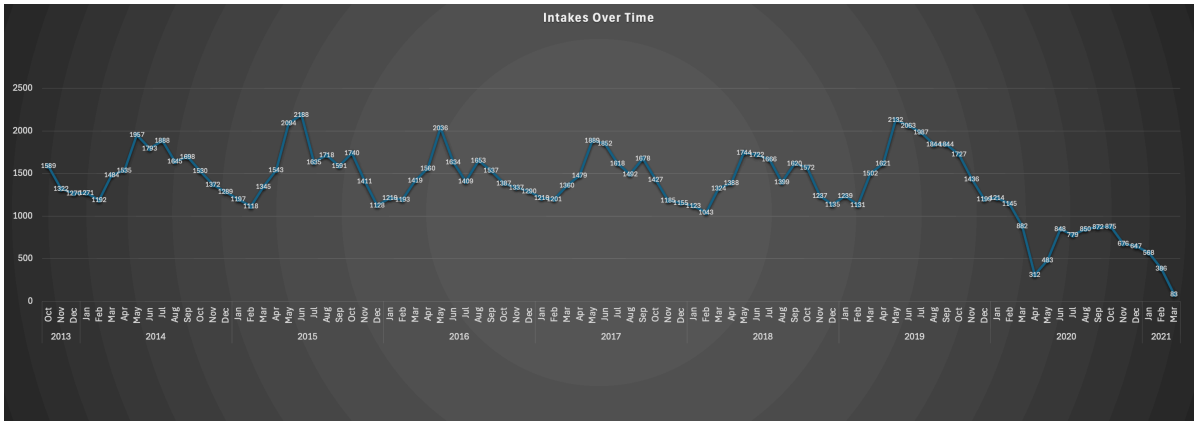
Column Name	Data Type	Description	Summary Stats
Animal ID	Text	Unique identifier	N/A
Intake Date	Date	Entry date	Range: 2013-2025
Animal Type	Text	Species	Dogs: ~50%, Cats: ~40%
Days in Shelter	Number	Stay duration	Mean: 30, Median: 25

4.3 Analysis Details

- **Cleaning**: Removed ~5% invalid dates using Excel filters.
- **Merging**: Used XLOOKUP and INDEX MATCH to link intakes and outcomes.
- **Aggregation**: Created PivotTables for intake trends, animal types, and outcomes.

4.4 Technical Visualizations

- **Figure 4: Intake Trends**



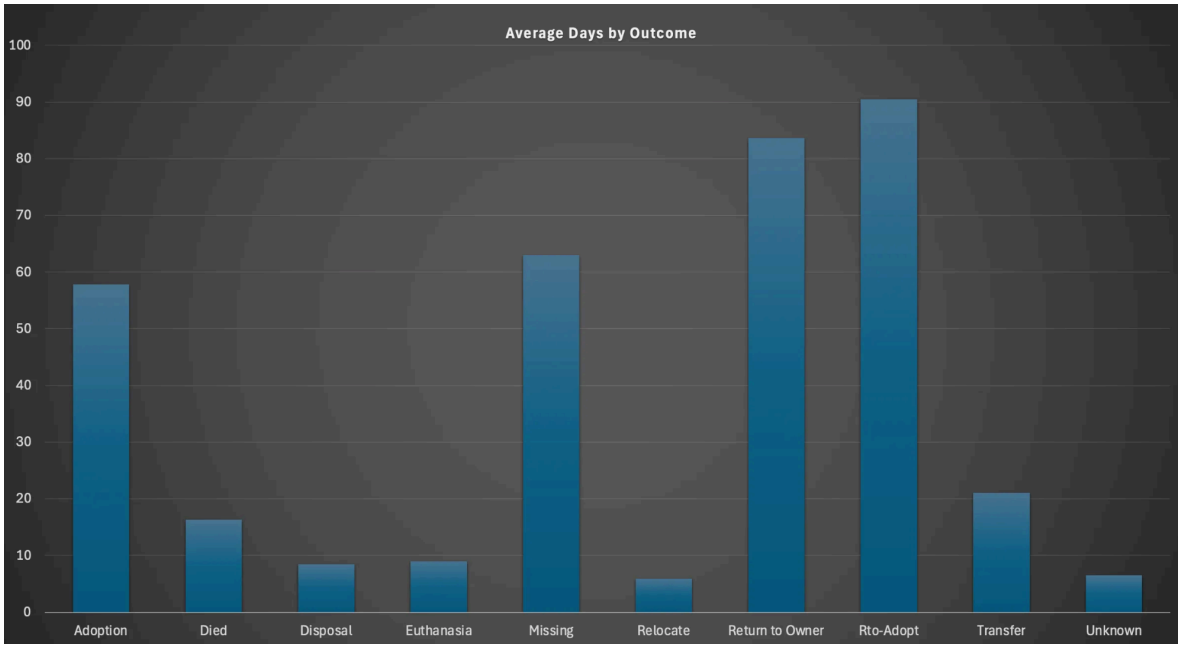
Caption: Monthly intake trends, 2013-2025.

- **Figure 5: Outcome Matrix**

Animal Type	Outcome Type	Number Of Outcomes
Bird	Adoption	205
	Died	19
	Disposal	28
	Euthanasia	118
	Missing	1
	No Outcome	1
	Relocate	10
	Return to Owner	33
	Transfer	171
Bird Total		**586**
Cat	Adoption	21049
	Died	680
	Disposal	77
	Euthanasia	1926
	Missing	33
	No Outcome	148
	Relocate	2
	Return to Owner	2199
	Rto-Adopt	143
	Transfer	20186
	Unknown	2
Cat Total		**46445**
Dog	Adoption	33093
	Died	253
	Disposal	34
	Euthanasia	1760
	Missing	28
	No Outcome	272
	Return to Owner	19210
	Rto-Adopt	542
	Transfer	15223
	Unknown	9
Dog Total		**70424**
Livestock	Adoption	8
	Died	1
	Euthanasia	1
	No Outcome	3
	Return to Owner	4
	Transfer	5
Livestock Total		**22**
Other	Adoption	521
	Died	191
	Disposal	427
	Euthanasia	4517
	Missing	4
	No Outcome	12
	Relocate	9
	Return to Owner	45
	Rto-Adopt	1
	Transfer	875
	Unknown	5
Other Total		**6607**

Caption: Outcome distribution by animal type.

- **Figure 6: Days in Shelter**



Caption: Average shelter stay by outcome.

4.5 Code Snippets

- **Formula 1: XLOOKUP for Outcome Date**

```
=XLOOKUP(A2, Outcomes!A:A, Outcomes!F:F, "No Outcome", 0)
```

Comment: Retrieves Outcome Date for a given Animal ID, returning "No Outcome" if not found.

- **Formula 2: INDEX MATCH for Outcome Subtype**

```
=IFERROR(INDEX(Outcomes!E:E, MATCH(A2, Outcomes!A:A, 0)), "No Outcor
```

Comment: Fetches Outcome Subtype using Animal ID, handling errors with "No Outcome".

- **Formula 3: Days in Shelter Calculation**

```
=IF(OR(G2="No Outcome", G2<B2), "", INT(G2-B2))
```

Comment: Calculates days between Intake and Outcome Dates, excluding negatives or missing data.

- **Formula 4: Helper Column for Date Validation**

```
=IF(ISNUMBER(B2), "Valid", "Invalid")
```

Comment: Checks if Intake Date is a valid number, flagging issues for review.

5. Recommendations

- Launch adoption campaigns for dogs and cats, targeting long-stay animals to increase adoptions by 10%. Justified by high intake volumes and adoption potential.
- Develop stray prevention programs to reduce intake rates, addressing the dominant stray intake type.
- Use the dashboard for ongoing monitoring, enabling data-driven resource allocation.

6. Conclusion

This analysis revealed dogs and cats dominate intakes, with adoptions leading outcomes but long stays for some animals. Recommendations focus on targeted campaigns and stray prevention. Future work could explore seasonal intake patterns or breed-specific trends, enhancing shelter efficiency.

7. Appendices

- **Appendix A**: Dataset schema with column descriptions. Includes all columns from Intakes and Outcomes datasets.
- **Appendix B**: PivotTable configurations for all analyses. Details settings for Trends, Types, Outcomes, and Shelter Time.

- **Appendix C**: Glossary of shelter terms (e.g., “Stray”, “Adoption”). Defines key terms for clarity.

8. References

- Austin Animal Center Data, https://data.austintexas.gov/
- Microsoft Excel Documentation, https://support.microsoft.com/
- Data Analysis with Excel, O’Reilly Media, 2020.