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3-2-5

Stop Culling

1. Motivation behind Research Paper

Do you know how many cats and dogs are killed in a year? About 200,000 cats and dogs are killed annually. Concerned about why so many cats and dogs continue to be destroyed in Japan and wanting to save the lives that are needlessly killed, I have been researching ways to reduce the number of cats and dogs being killed in Japan.

2. Introduction

My group and I decided to explore this topic because we were interested in killing and wanted to do something to help pets that are being killed. We discussed and began exploring whether differences in local (shelter) efforts are proportional to differences in transfer and kill rates.

3. Results and Analysis

National Killing and Transfer Rates

First, we calculated the killing percentage of every region and researched which region's number of the killings was higher or lower.From data presented to the Ministry of the Environment, The kill rate was calculated by (number of animals disposed) ÷ (number of animals taken in) × 100. We could calculate the number of the killing percentage but we realised that even with the same zero kill rate, there is

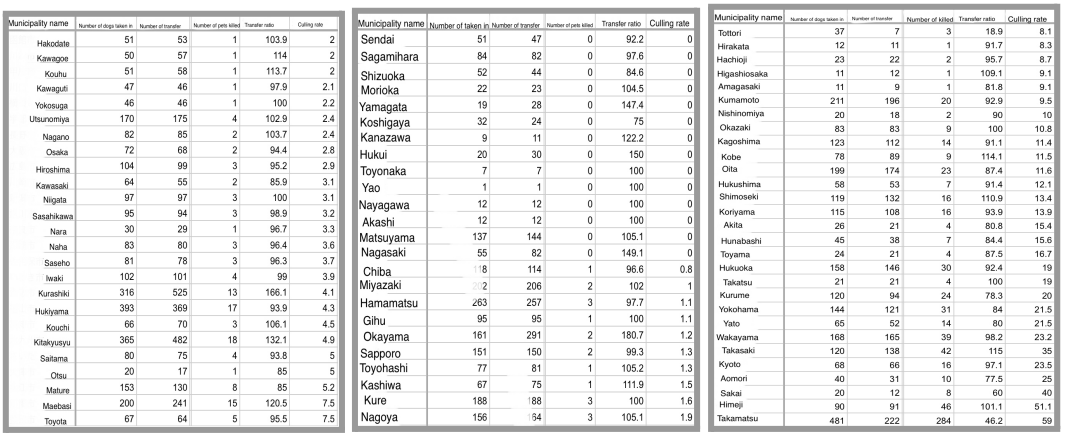
a difference in the amount of activity in the area between areas where the number of take-backs in the population is high and areas where the number is low. Figure 1 (1) shows that Yao City has a 0% kill rate because it killed 0 and gave away 1 animal out of the 1 it took in, while Takamatsu City has a 75% kill rate because it killed 360 and gave away 173 out of 481 animals it took in. These indicate that a higher number of transfers does not necessarily mean a lower number of kills. Moreover, if the number of the killing is zero, to begin with sometimes the number of dogs taken in is low.

Based on the idea that "the amount of activity may differ between areas with a high transfer rate and areas with a low kill rate of zero," and the thought that "if transfer meetings were more active, all shelter dogs in the care of shelters would be transferred and no dogs would be killed," we hypothesised that the measures taken to achieve a zero kill rate in the region would be reflected in the numbers The hypothesis was that the transfer rate would be the key factor that would contribute to increasing the transfer rate. We then decided to examine the regularity of regions with high transfer rates (in Figure 2, red indicates regions with high transfer rates and blue indicates regions with low transfer rates), with the thought that if factors contributing to higher transfer rates could be identified, disseminating them to each municipality could lead to solutions. From Figure 2, there is a large difference in transfer rates between Niigata and Ehime prefectures, with Niigata having a transfer rate of 114% and Ehime having a transfer rate of 33%. However, a comparison of the number, frequency, and dates of transfer meetings held in a year from a website that summarises transfer meetings nationwide did not indicate that the transfer rate was higher because of the frequency of the meetings, nor did the method of application

or location of the Comparisons did not reveal any significant differences. In addition, few of the regions posted details of specific measures and initiatives on their websites, and we were unable to find any significant differences in their efforts between regions with high transfer rates and those without such rates.

Municipality name	Number of dogs taken in	Number of transfer	Number of killed	Transfer ratio	Calling rate
Yao	1	0	0	1	100
Takamatsu	481	360	75	173	36

Figure 1. Comparison of transfer rate and kill rate



Municipality name	Number of dogs taken in	Number of transfer	Number of pets killed	Transfer ratio	Culling rate
Hakodate	51	53	1	103.9	2
Kawagoe	50	57	1	114	2
Kouhu	51	58	1	113.7	2
Kawaguti	47	46	1	97.9	2.1
Yokosuga	46	46	1	100	2.2
Utsunomiya	170	175	4	102.9	2.4
Nagano	82	85	2	103.7	2.4
Osaka	72	68	2	94.4	2.8
Hiroshima	104	99	3	95.2	2.9
Kawasaki	64	55	2	85.9	3.1
Niigata	97	97	3	100	3.1
Sasahikawa	95	94	3	98.9	3.2
Nara	30	29	1	96.7	3.3
Naha	83	80	3	96.4	3.6
Saseho	81	78	3	96.3	3.7
Iwaki	102	101	4	99	3.9
Kurashiki	316	525	13	166.1	4.1
Hukiyama	393	369	17	93.9	4.3
Kouchi	66	70	3	106.1	4.5
Kitakyusyu	365	482	18	132.1	4.9
Saitama	80	75	4	93.8	5
Otsu	20	17	1	85	5
Mature	153	130	8	85	5.2
Maebasi	200	241	15	120.5	7.5
Toyota	67	64	5	95.5	7.5

Municipality name	Number of taken in	Number of transfer	Number of pets killed	Transfer ratio	Culling rate
Sendai	51	47	0	92.2	0
Sagamihara	84	82	0	97.6	0
Shizuoka	52	44	0	84.6	0
Morioka	22	23	0	104.5	0
Yamagata	19	28	0	147.4	0
Koshigaya	32	24	0	75	0
Kanazawa	9	11	0	122.2	0
Hukui	20	30	0	150	0
Toyonaka	7	7	0	100	0
Yao	1	1	0	100	0
Nayagawa	12	12	0	100	0
Akashi	12	12	0	100	0
Matsuyama	137	144	0	105.1	0
Nagasaki	55	82	0	149.1	0
Chiba	118	114	1	96.6	0.8
Miyazaki	202	206	2	102	1
Hamamatsu	263	257	3	97.7	1.1
Gihu	95	95	1	100	1.1
Okayama	161	291	2	180.7	1.2
Sapporo	151	150	2	99.3	1.3
Toyohashi	77	81	1	105.2	1.3
Kashiwa	67	75	1	111.9	1.5
Kure	188	188	3	100	1.6
Nagoya	156	154	3	105.1	1.9

Municipality name	Number of dogs taken in	Number of transfer	Number of killed	Transfer ratio	Culling rate
Tottori	37	7	3	18.9	8.1
Hirakata	12	11	1	91.7	8.3
Hachioji	23	22	2	95.7	8.7
Higashiosaka	11	12	1	109.1	9.1
Amagasaki	11	9	1	81.8	9.1
Kumamoto	211	196	20	92.9	9.5
Nishinomiya	20	18	2	90	10
Okazaki	83	83	9	100	10.8
Kagoshima	123	112	14	91.1	11.4
Kobe	78	89	9	114.1	11.5
Oita	199	174	23	87.4	11.6
Hukushima	58	53	7	91.4	12.1
Shimoseki	119	132	16	110.9	13.4
Koriyama	115	108	16	93.9	13.9
Akita	26	21	4	80.8	15.4
Hunabashi	45	38	7	84.4	15.6
Toyama	24	21	4	87.5	16.7
Hukuoka	158	146	30	92.4	19
Takatsu	21	21	4	100	19
Kurume	120	94	24	78.3	20
Yokohama	144	121	31	84	21.5
Yato	65	52	14	80	21.5
Wakayama	168	165	39	98.2	23.2
Takasaki	120	138	42	115	35
Kyoto	68	66	16	97.1	23.5
Aomori	40	31	10	77.5	25
Sakai	20	12	8	60	40
Himeji	90	91	46	101.1	51.1
Takamatsu	481	222	284	46.2	59

Figure 2. Overall transfer vs. kill rate

The current state of the shelters

We volunteered at a shelter (World Love Heart) in Nara Prefecture on four occasions in order to learn about the actual activities of the shelter, to learn about the current situation from the people working there, and to gain new information. What we learned at the shelter was that each individual dog has a different personality, and that Shiba and Japanese dogs, in particular, will stop listening to their owners if they are not taken care of carefully. This leads many people to feel that they are harder to take care of than they expected or that they do not have the personality they expected, and as a result, they stop keeping them.

Furthermore, new information was obtained on transfer rates, which had been stagnant due to the lack of regularity found. The reason why we could not find any regularity in our research on transfers and could not find any difference in the efforts in each city was because there were deficiencies in the management of the transfer activities, which are largely responsible for the transfer rate. We thought that if data on the number of volunteers and specific management methods were managed by each shelter, it would be possible to increase the transfer rate in all areas by implementing the activities of cities with high transfer rates, but in transfer meetings, the results depend on people's efforts, and shelters and other facilities are run by individuals and In addition, since most shelters are run by individuals or volunteers, detailed information and data are not managed and records are not kept. Therefore, we found that we could not find any difference in transfer rates and proportionate efforts when we checked the prefectural government's website. This led us to believe that it would not be realistic to look for a solution based on the two initial goals of "eliminating the killing" by dividing the difference in each city's activities based on the killing rate and the difference in activities based on the transfer rate, because the data is not accurate. (Figure 3)

A	B	C	D	E
	number of transfers + returns	number of dogs taken in	transfer ratio	rounding half up
青森	171	267	64.04494382	64
宮城	356	325	109.5384615	110
山形	267	386	69.17098446	69
福島	97	91	106.5934066	107
茨城	1018	1019	99.90186457	100
東京	142	141	100.7092199	100
神奈川	203	198	102.5252525	102
新潟	180	158	113.9240506	114
福井	92	85	108.2352941	108
京都	62	62	100	100
兵庫	79	152	51.97368421	52
奈良	51	76	67.10526316	67
岡山	200	197	101.5228426	102
広島	1200	1172	102.3890785	102
山口	1298	1349	96.21942179	96
徳島	528	831	63.53790614	64
香川	1125	1493	75.35164099	75
愛媛	222	669	33.1838565	33
長崎	367	789	46.51457541	47

Figure 3. transfer percentage by the Ministry of the Environment Reference

Existing state of microchip implantation

Next, we turned our attention to microchips, which became mandatory on June 1, 2022. A microchip is like a lost child tag that is implanted in an animal's body, is harmless, and does not need to be replaced once it is implanted. The microchip is approximately 2 mm in size and 11 mm in length, and can be implanted with the same ease and stress as a standard injection. If an animal is microchipped and its identity is known, it is more likely to be returned to its family in the event of a disaster or if it becomes lost. Microchipping also makes people more aware that they are the owner of the dog. The microchip also makes people more aware that they are the owner of the dog, and is expected to reduce the number of people who abandon their dogs (Figure 4).

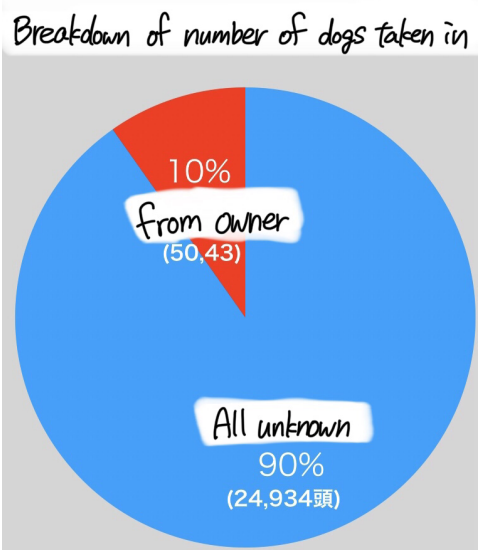


Figure 4. Breakdown of the number of dogs taken in, sources from theAnimal Protection and Management Office

4. Conclusion and Future Problems

Figure 4 shows that until the introduction of the microchip, about 70% of newly adopted dogs were purchased from breeders and pet stores. When dogs are taken in from breeders or pet stores after June 1, 2022, it is expected that about 70% of the dogs will be identified because dogs with microchips are sold. From Figure 3, we hypothesise that 90% of the dogs taken in by shelters are unidentified, but that after several decades have passed since the introduction of the microchip, the identities of 90% of these dogs will be known, and the number of dogs being killed will decrease. Based on these facts, we believe that microchipping will reduce the number of dogs taken in by shelters due to unidentification, and that microchipping will lead to a decrease in the number of dogs being killed. However, it is inevitable that there are dogs that cannot be transferred due to various reasons, such as harm to humans or untreatable diseases. Since we do not know how effective the microchip will be, we will continue to monitor its progress.

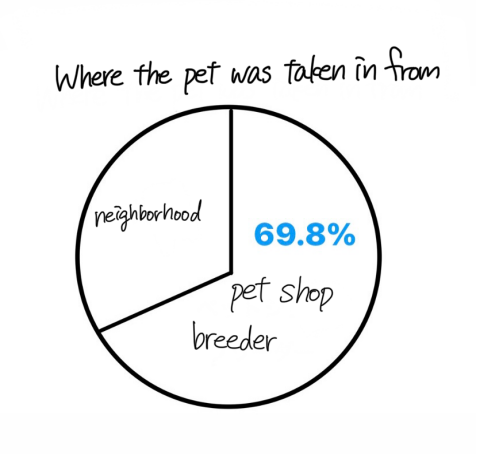


Figure 5: Dog pick-up locations Ministry of the Environment reference

5. Reflection

Through this exploration, we were not able to find a specific activity to increase the transfer rate. However, when we reached a plateau , we discussed it as a group, came up with a new hypothesis, and started exploring again toward that goal. There are still areas in Japan where people are forced to kill pets. I would like to continue my activities to reduce the number of wasted lives, as well as to support and spread the movement to eliminate the killing of animals in Japan.

6. Work Cited

Ministry of the Environment: Statistical data, "Status of dogs and cats taken in and injured animals housed and disposed of" 1st May 2022. Web. 8 June 2021. https://www.env.go.jp/nature/dobutsu/aigo/2_data/statistics/dog-cat.html

Ministry of the Environment: Act No. 105 of 1973 Act on Welfare and Management of Animals, 1st June 2021. Web. 8 June 2021 https://elaws.e-gov.go.jp/document?lawid=348AC1000000105