The Triage in Pine Street Inn

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Introduction

Emergency shelter is an important resource for those individuals who cannot be immediately linked with other interventions, like rapid re-housing or permanent supportive housing. However, over the years, emergency shelters have often become the default long-term "housing" option for people who have been unable to connect to resources they need to secure permanent housing.

Designated triage and assessment centers would be the "front door" of the homelessness response system in which emergency shelter serves its original purpose – meeting the immediate needs of people with nowhere else to go – and focuses on connecting individuals with the resources they need to secure permanent housing quickly. At a triage and assessment center, an intake worker would assess the specific needs of the individual in crisis and direct that person to the appropriate resources. This would result in reductions in length of stay in emergency shelter and lower rates of return to homelessness, both of which would free up resources for investment in long-term housing solutions.

Pine Street Inn is the largest homeless services provider in New England and has offered the triage service for years. In this report, the data about the triage information offered by the Pine Street Inn is analyzed, described and interpreted in a systematic manner. Through the analysis, we would like to know whether the shelter has any preferences in selecting candidates for triage and whether the triage center makes any difference in reductions in length of stay .

Data analysis

Before the analysis, I first divide the homeless people into two groups, one of which have never gone through the triage process while the other one have. The information about the groups is as follows:

- The count of all people: 15661
- The count of people in triage group: 3533
- The count of people in non-triage group: 8300
- The count of people who can not be allocated to either group: 3828

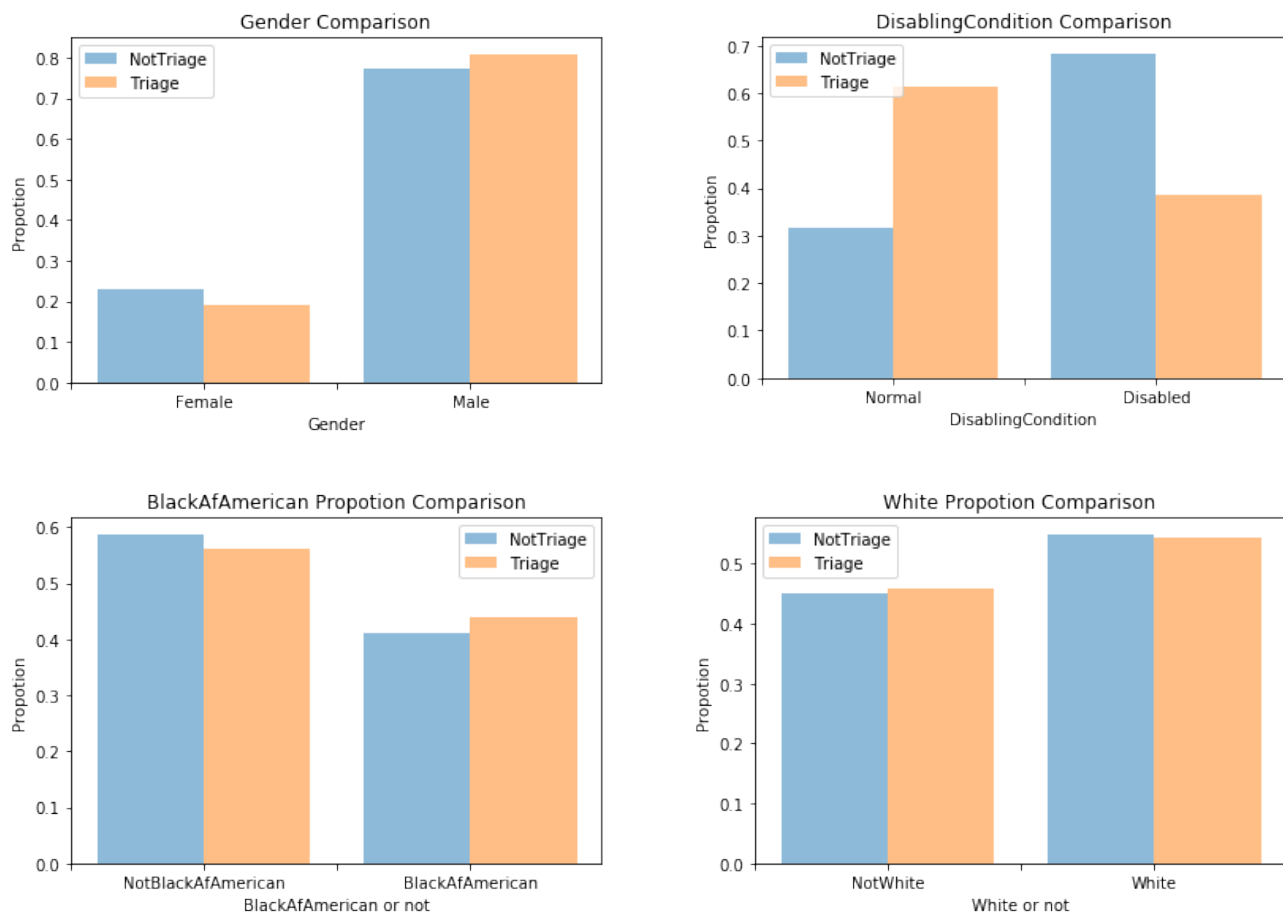**1. the demographics comparison between the two groups**

Figure 1 demographics comparison between the two groups

In figure 1, I list some demographic factors that differ in proportions in the two groups. After I perform the student t test, I am confident that Black African Americans and the un-disabled people are more likely to be selected for triage at 0.05 significance level.

The p-values of the student t test are as follows:
- p (gender) = 0.3386028324231598 > 0.05
- p (disabled) = 4.2049375799823e-29 < 0.05
- p (black) = 0.006797869128850238 < 0.05
- p (white) = 0.47621327873817965 > 0.05

2. the bed nights/bed nights frequencies comparison

For each person, I count the number of nights he/she stays in the shelter as bed nights. The bed nights frequencies is computed as the number of bed nights divided by the number of days since one first enter the shelter.

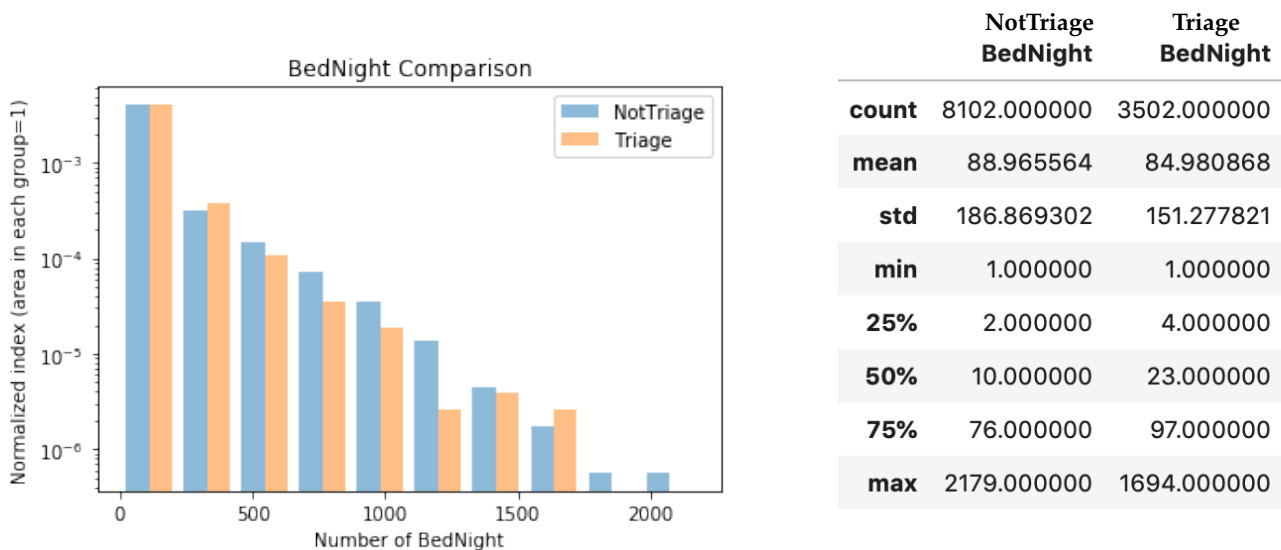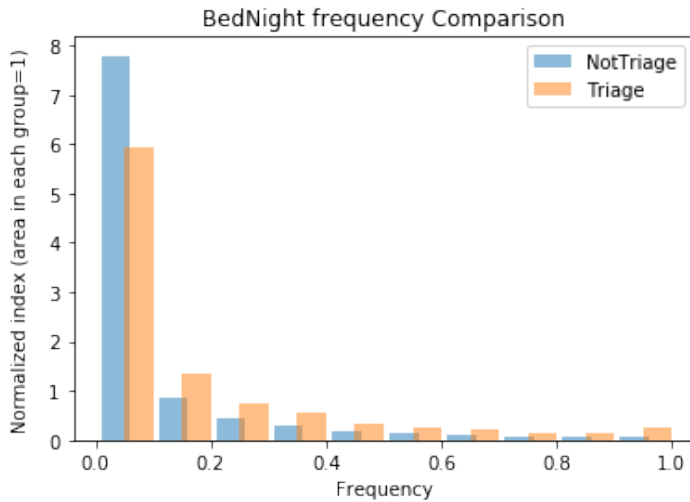|	NotTriage BedNight	Triage BedNight
count	8102.000000	3502.000000
mean	88.965564	84.980868
std	186.869302	151.277821
min	1.000000	1.000000
25%	2.000000	4.000000
50%	10.000000	23.000000
75%	76.000000	97.000000
max	2179.000000	1694.000000

Figure 2 bed nights comparison between the two groups

According to Figure 2, there are more extremely long bed nights stays in the not-triage group, so the mean and standard deviation of bed nights in this group are high. However, the 25, 50, 75 percentile of bed night values are higher in the triage group, meaning that most people who have ever gone through the triage process stay in the shelter for more nights.
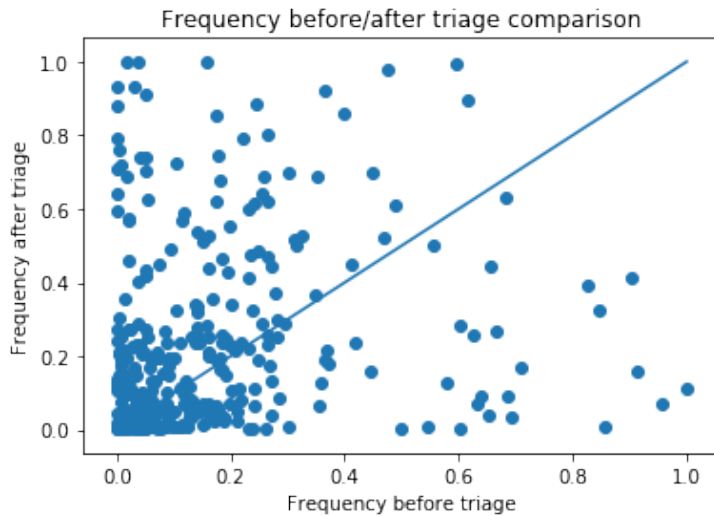

I also compare the bed nights frequencies between the two groups. Generally speaking, people who have ever gone through the triage process sleep in the shelter more frequently.

Figure 3 bed nights frequencies comparison between the two groups

3. Before and after triage comparison

Among the people who have ever been triaged, I can only identify 960 of them who have the information of both the triage date and the first enter date. Some people were triaged at the first time they came to the shelter, while others had come to the shelter before they were triaged.

- The total number of people identified in the triage group: 960
- The count of people triaged at the first time they came to the shelter: 597
- The count of people having come before the triage: 363

Figure 4 frequencies before/after triage comparison

In the 363 people who had come to the shelter before, most of them sleep in the shelter more frequently after the triage process.

I would also like to compare the bed night frequencies between the two groups, one of which were triaged in their first visit, while the other had come before.

	Not_First_time	First_time	
	Frequency	Frequency_B	Frequency_A
count	597.000000	357.000000	357.000000
mean	0.188448	0.149338	0.218683
std	0.267974	0.187331	0.246388
min	0.001502	0.000637	0.001739
25%	0.011029	0.022541	0.034783
50%	0.063492	0.080268	0.130178
75%	0.238095	0.197044	0.283069
max	1.000000	1.000000	1.000000

Figure 5 frequencies comparison in two groups

According to figure 5, the values of mean, minimum and 75 percentile measures in the not_first_time group are in the middle of what in the before and after triage subgroups of the first_time group. So the two main groups generally don't differ much if I combine the sub-groups the first_time group together.

Conclusion

After the analysis, I have more questions than conclusions:

- If some people are more likely to take triage, what's the selection process for the triage assessment? Do the staff have any preference in selecting people?

- Why most people in Pine Street Inn who have ever been triaged generally stay in the shelter more frequently and for more nights. Is it because some people avoid entering shelter with little assistance in the triage while others having high demands of resources which cannot be met immediately actually enter the shelter?

- Why do people sleep in the shelter more frequently after the triage? Is it because they were not directed to the appropriate resources and have to stay in shelter for the long term?

To answer these questions, I need more data as well as information from the shelter for further explorations .