

## Team NEON

**Teammates:** Sophie Guo, Carrie Hang, Henoc Codjie, Lipsa Tripathy, Alejandra Camargo

### **Attorney Recruitment Plan and Distribution of Categories:**

We used R to perform statistical analysis and generate a map of the U.S. that represents the varying ratio of clients to attorneys in each state. We used RStudio to calculate these statistics. We innovated an equity factor which is calculated by the client to attorney ratio for each state divided by the sum of the client to attorney ratio for all states. This equity factor will be used to determine levels of recruitment for each state. We used Jupyter to create pie charts that display the Distribution over Categories. Analyzing the map, we can see which states have the highest ratio, and which has the smallest. In the map, we can see that Arizona has the largest client to attorney ratio along with other states such as South Carolina, and Indiana. This can help provide insight on which states would require the most recruitment for attorneys.. Further analysis of the categories show that most states have similar top categories. Most clients in most states ask questions under “Family and Children”, “Other”, and “Housing and Homelessness.” During the language and sentiment analysis between Clients and Attorneys, there were mainly positive interactions.

### **Language Analysis:**

Using the “Questions Posts” dataset, we were able to clean the data and by using R to loop through the actual posts text, we found out the amount of informal language used in each post. Then, by using the ids and question ids, we found the difference between the first id used and the id of the post, grouped by the question ids. Since the first question was posed by the client, we were able to find that every even difference was the client and every odd difference was the attorneys as they went back and forth. This allowed us to have two dataframes for the clients and the attorney posts. Using these we found out the disconnect between the amount of formal and informal language used by the attorneys and clients. Using the Thomas and McDonagh study, we can confidently say that a more casual approach on the side of the attorneys would lead to better communication and better assistance over all. Finally, we ran a sentiment analysis on the client side to show that despite the language use differences, the clients had a positive experience overall.

### **References:**

<https://r4ds.had.co.nz/exploratory-data-analysis.html> (Boxplot, and Left-Join).

<https://www.statology.org/grouped-boxplot-r-ggplot2/> (Color)

Thomas, J., & McDonagh, D. (2013). Shared language: Towards more effective communication. The Australasian medical journal, 6(1), 46–54. <https://doi.org/10.4066/AMJ.2013.1596>