

Introduction

- We partnered with Verite, a global, nonprofit organization aiming to ensure that everybody in the world has the opportunity to work under safe, fair, and legal conditions.
- We looked into labor brokers in the Philippines that exploit migrant workers during the recruitment process (high broker's fee, falsely promising a higher wage, promising a fake job)

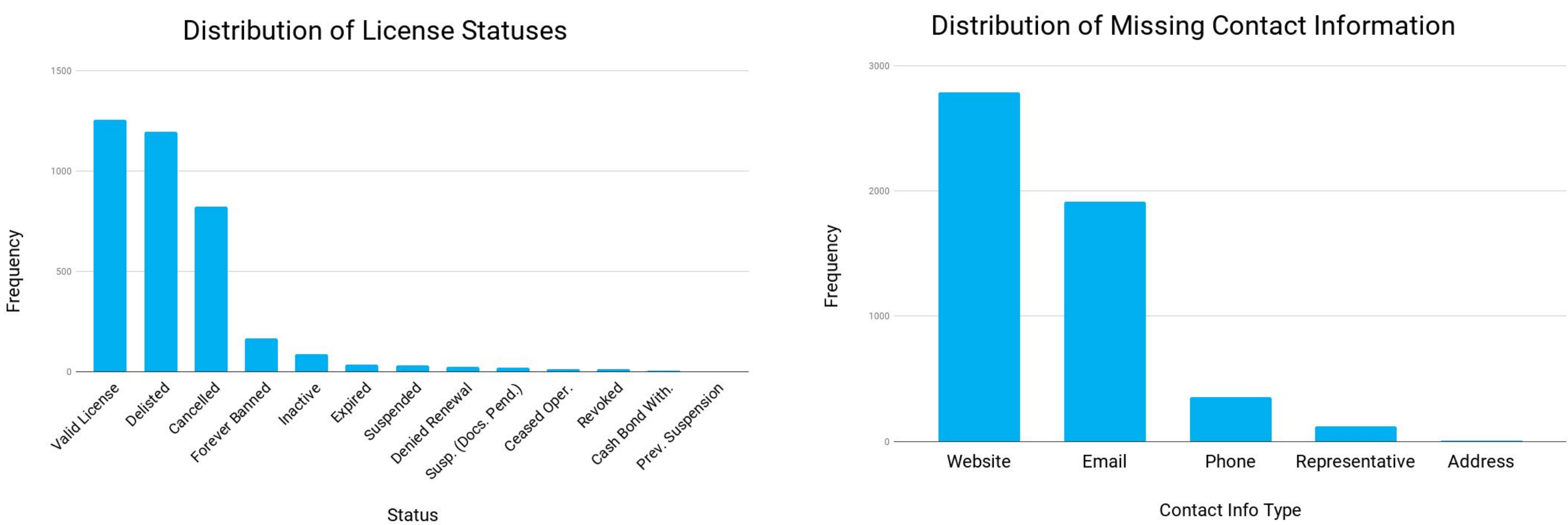
Question and Hypotheses

- **Primary question:** How can we identify labor brokers with license violations so Verite can concentrate their efforts in creating slavery-free supply chains?
- **Hypothesis #1:** Labor brokers are concentrated in cities, and labor brokers with same types of violations congregate together in the same place.
- **Hypothesis #2:** There is a significant correlation between missing contact information and license violations.

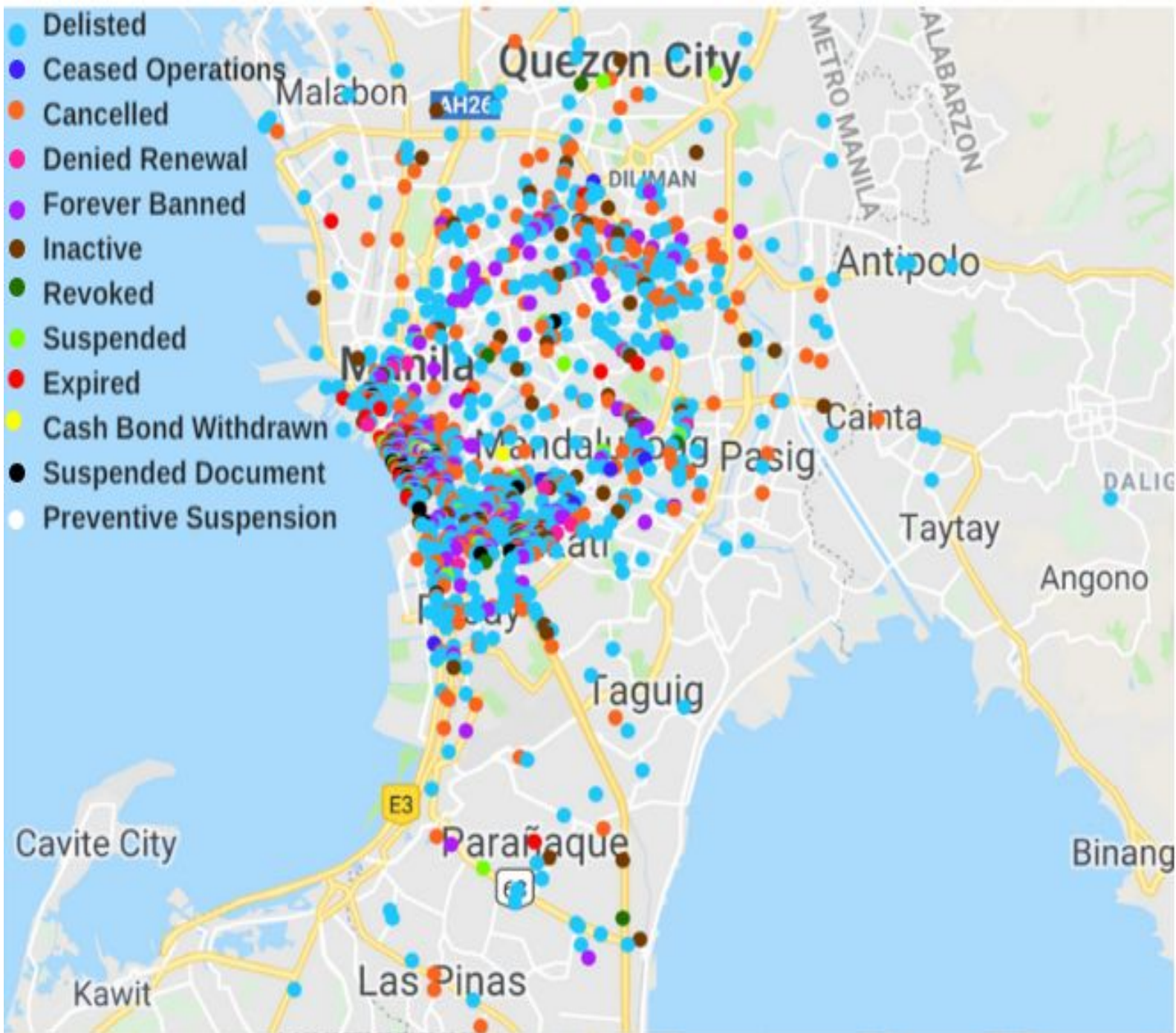
Data

- We analyzed data released by the Philippine Overseas Employment Administration on labor brokers.
- The data, while not downloadable, was uniformly formatted on the webpage. Every agent consisted of eight lines that followed the pattern: labor agent name, address, phone number, email address, website, official representative, status (the target category, this states whether or not the agent has a license violation), and a license validity period.
- We chose this dataset because it is one of the few comprehensive, regularly-updated data sources on labor agencies available.

Data Analysis



Map Visualizations



- The most common types of violations reported are Delisted, Cancelled, and Forever Banned, and they are predominantly concentrated around the Port of Manila and the diplomatic area in the district of Malate.
- The clustering on the map shows that the most similar types of license-violating brokers tend to cluster together. This could be a sign that brokers have formed a syndicate to abuse and exploit the migrant workers

Conclusions

- License violating brokers tend to cluster together around the Port of Manila, possibly because the Port is the main gateway into and out of the country.
- Labor brokers are more likely to have a violation if they are actively trying to obscure their lines of communication.

Logistic Regression

Model $R^2 = 0.3809$, $p < 0.0001$
Cross-validation: average precision = 95.5%, average recall = 77.9%.

Predictor	p-value	Odds Ratio	Interpretation
Missing Email	<0.0001	44.0	A labor broker is 44 times more likely to have a negative status if they do not have an email listed in the database, when all other variables are held constant.
Missing Representative	0.002	3.2	A labor broker is 3.2 times more likely to have a negative status if they do not have a representative listed, when all other variables are held constant.
Missing Website	<0.0001	0.7	A labor broker is 0.7 times as likely (or 30% less likely) to have a negative status if they had a website listed, when all other variables are held constant.



- Most labor brokers tend to cluster around the city of Makati and the district Malate. This is possibly due to the proximity to the Port of Manila and the diplomatic area.
- Labor brokers are mostly by the harbor. This is likely because of the large cruise ship industry in the Philippines, and the fact that labor brokers recruit workers for the jobs on the ships.

Future Work

- The majority of migrant workers from the Philippines are sent to Taiwan to work. Analyzing the Taiwan-based labor broker database would require the assistance of a Mandarin speaker for translation
- We found that when a labor broker has a website, they are more likely to have a negative license status. Could a website imply that a labor broker is trying to hide something by looking more advanced?