

FARMER TIM'S VEGETABLES CUSTOMER RETENTION PREDICTION

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CONTENT

- Data
- Part I: 2021 Customer Retention Prediction
- Part II: Transactions Data Visualization
- Part III: CSA Data Visualization
- Recommendations





DATA

Two raw datasets from the farm:

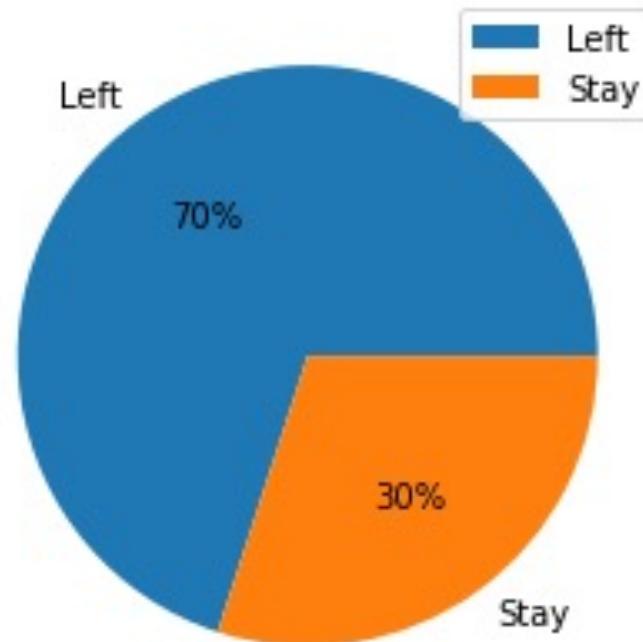
- 2015-2021_transactions.xlsx
- 2018-2021_CSA.xlsx (438 CSA)

After data cleaning and wrangling:

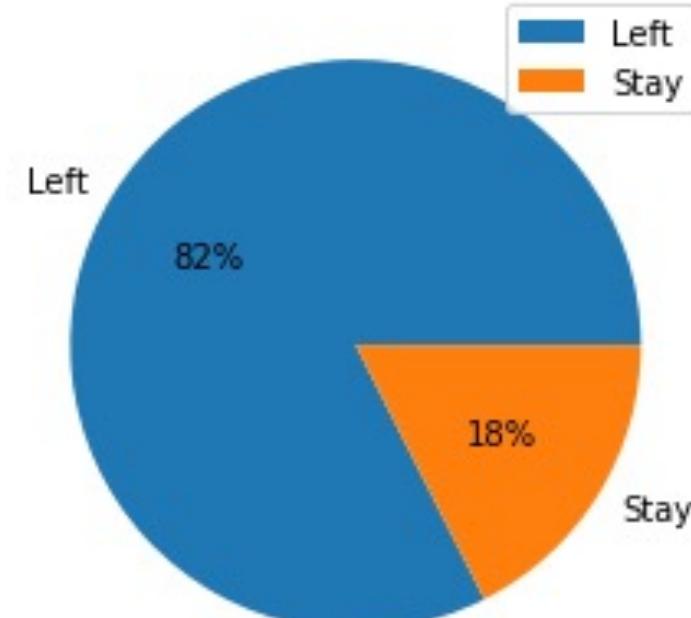
- transactions_2015-2020.csv:
(927 rows, 16 columns, for building prediction model)
- transactions_2021.csv:
(497rows, 16columns, to predict)
- 111 are CSA

Part I: 2021 Customer Retention Prediction

2015-2020 Customer Retention Rate



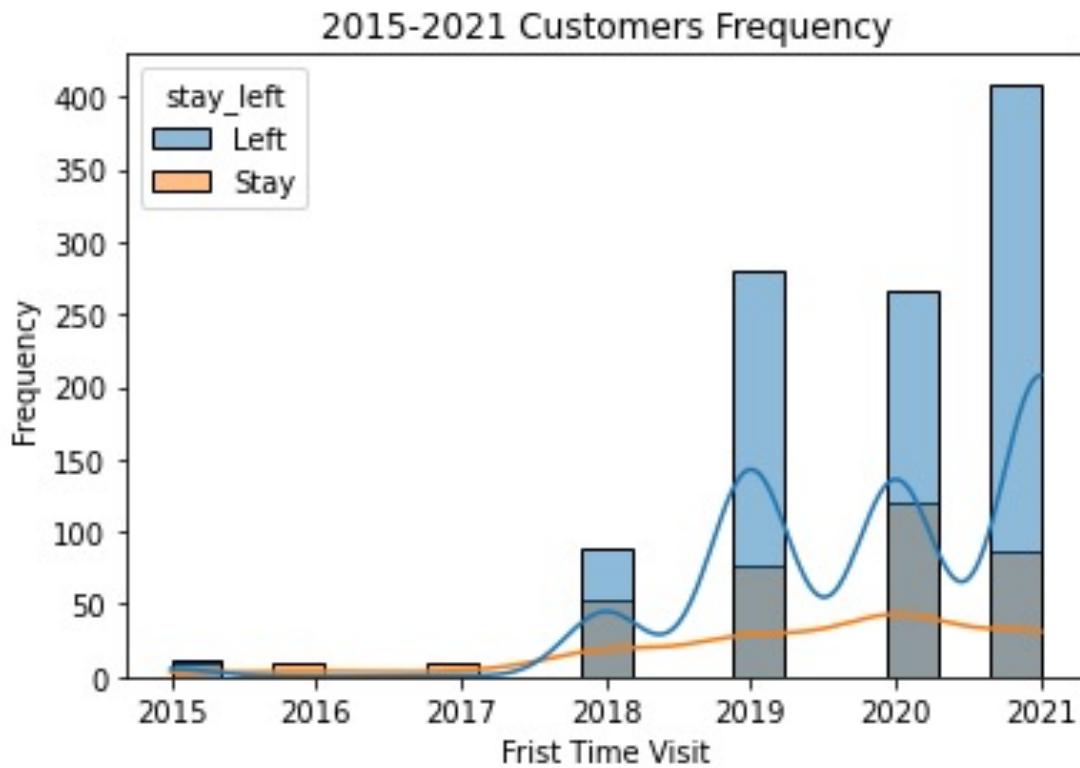
2021 Predicted Customer Retention Rate



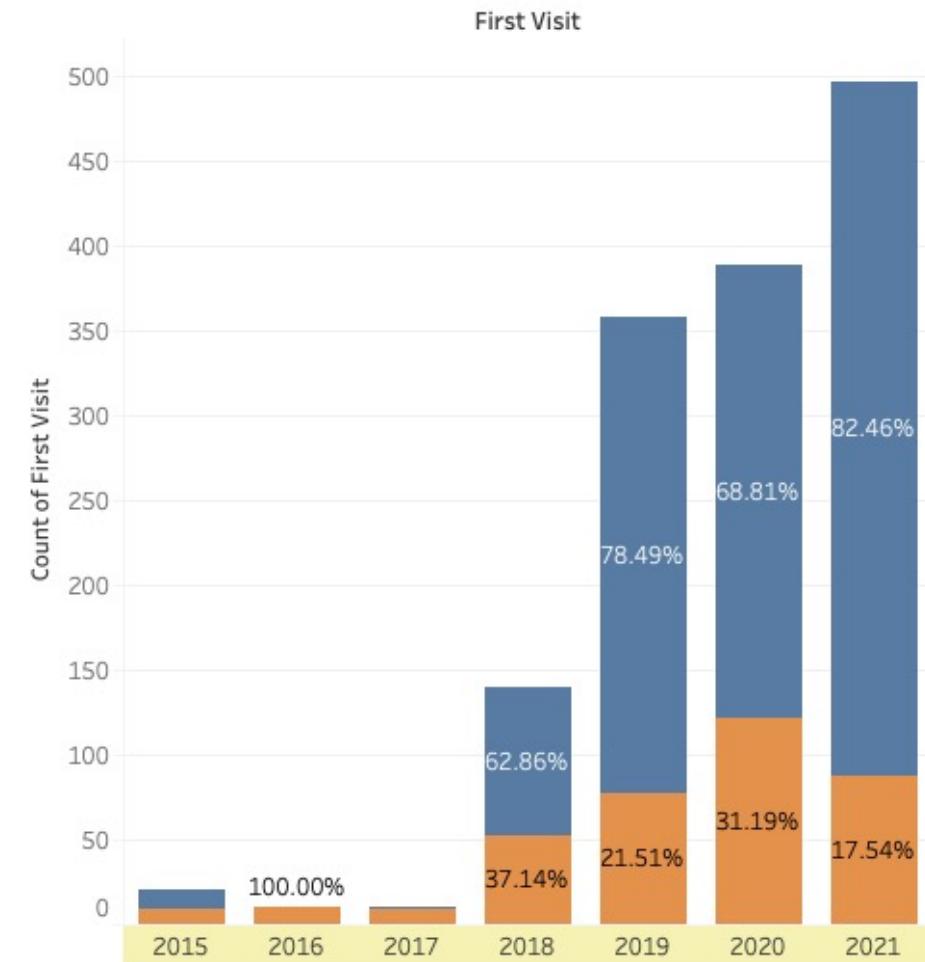
Prediction before and after.

From 2015 to 2020, over 6 years of data shows that 30% of customers stay with the farm more than 1 year and 70% of customers left, who didn't come back for next year.

Based on trying all kinds of prediction model, we decided to use KNN model to predict the 2021 new data because of its highest f1 score, 0.944. According to our prediction, the customer retention rate in 2021 is 18%, in other words, there 18% of new customers would come back for next year.

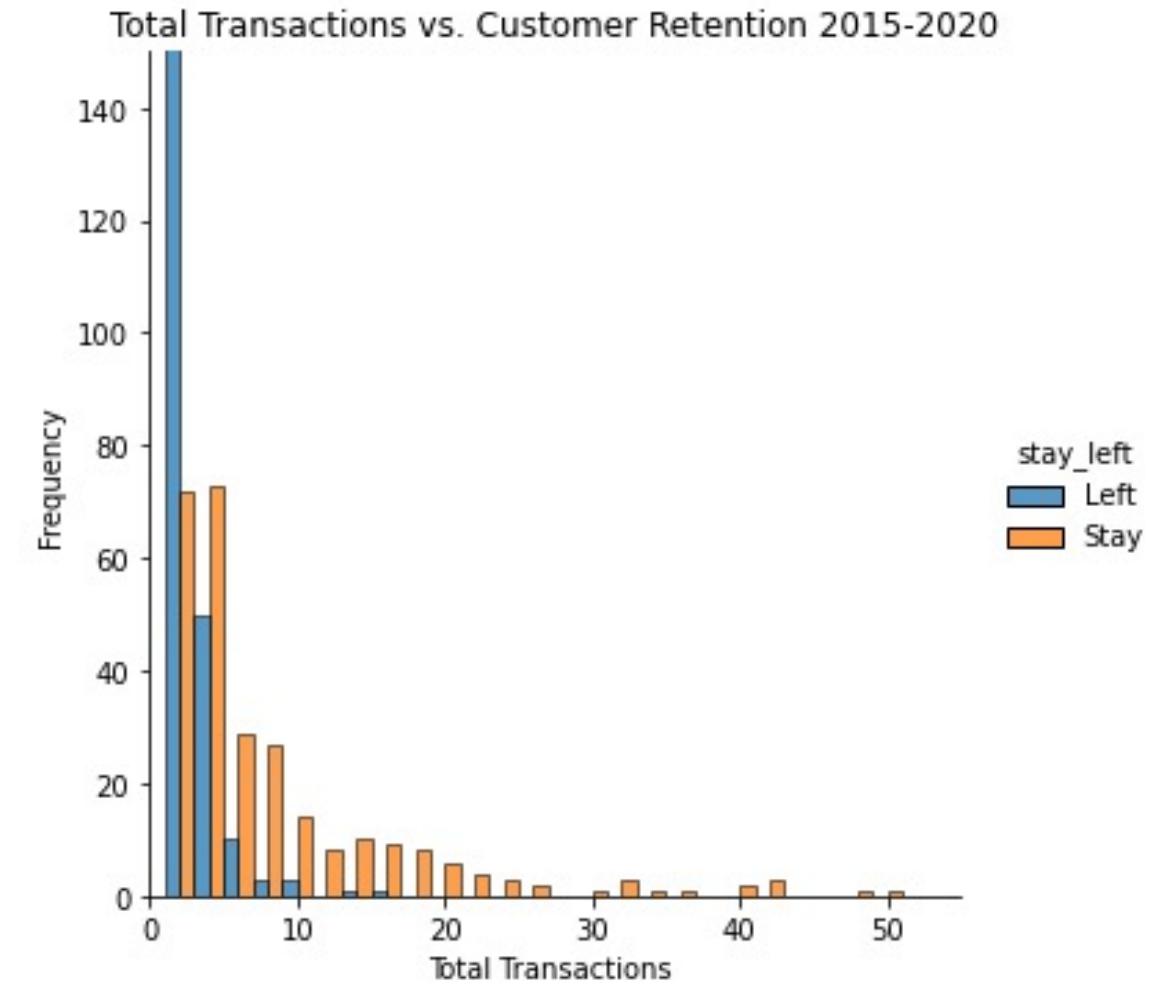
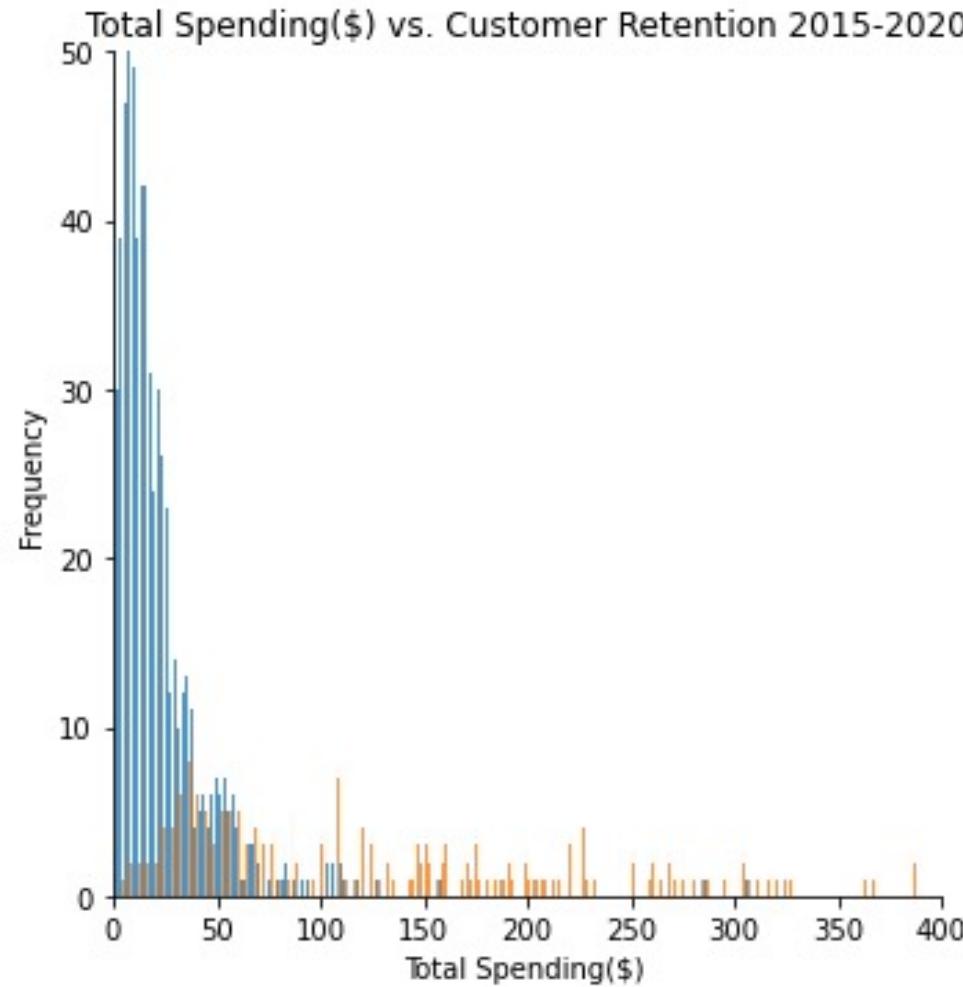


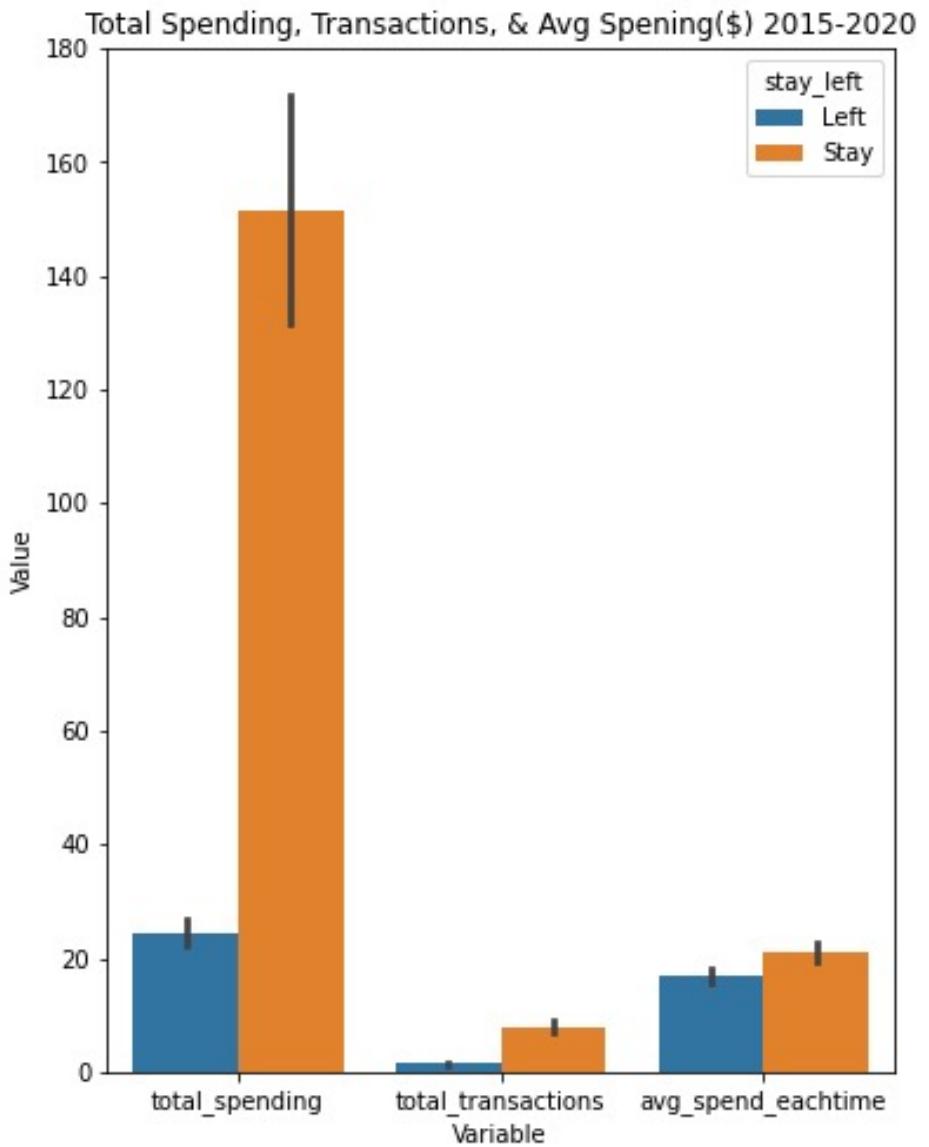
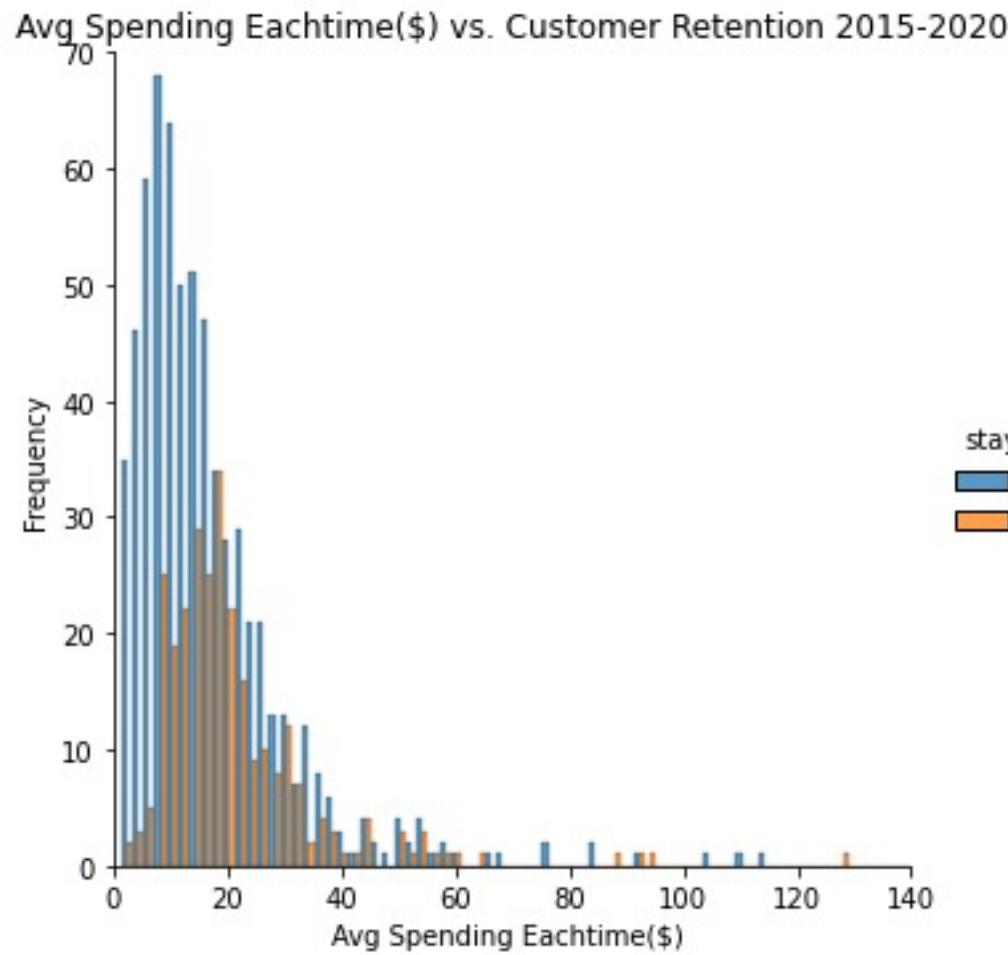
Customer Retention rate 2015-2021(Predicted)

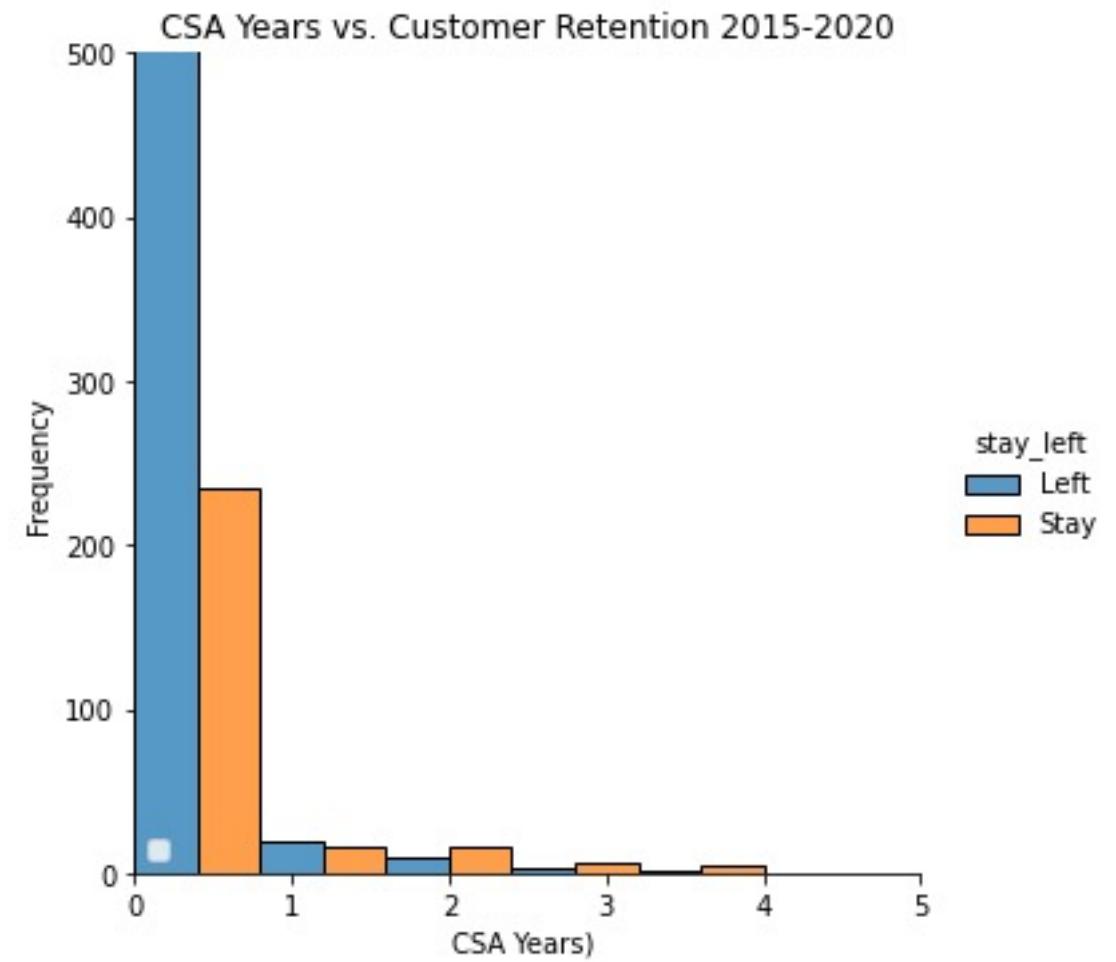
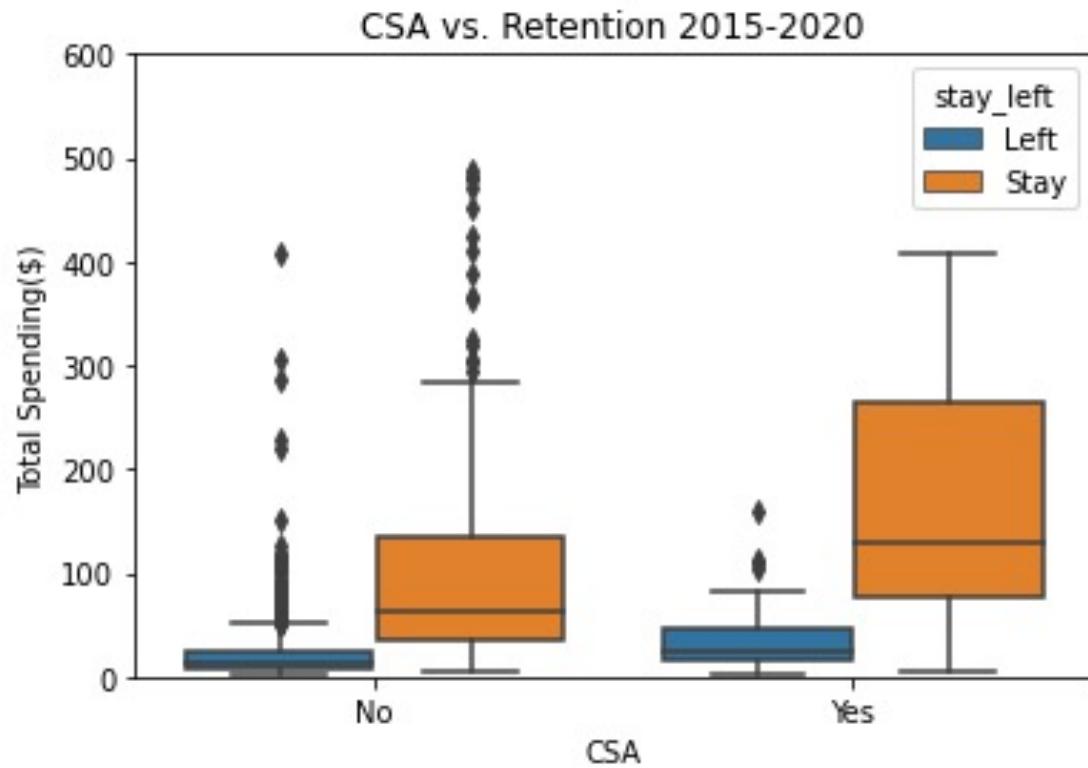


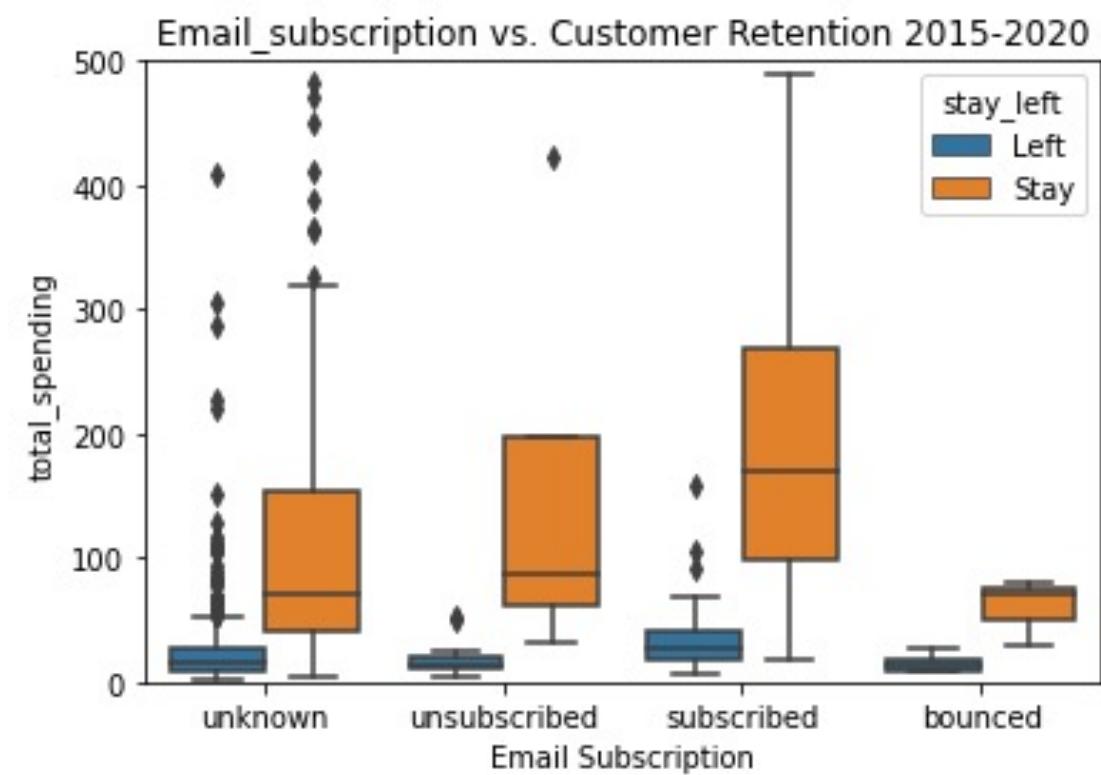
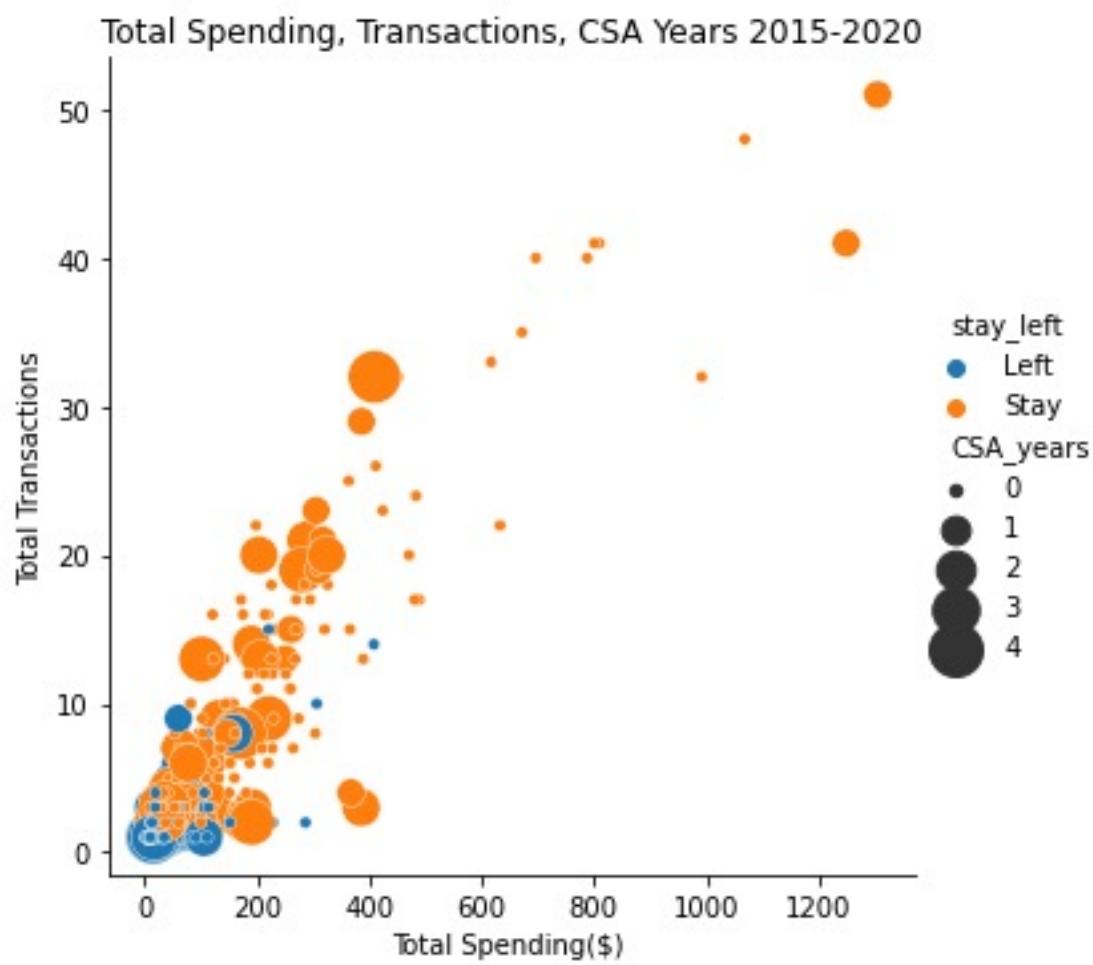
Stay Left
Left
Stay

Part II : Transactions Data Visualization





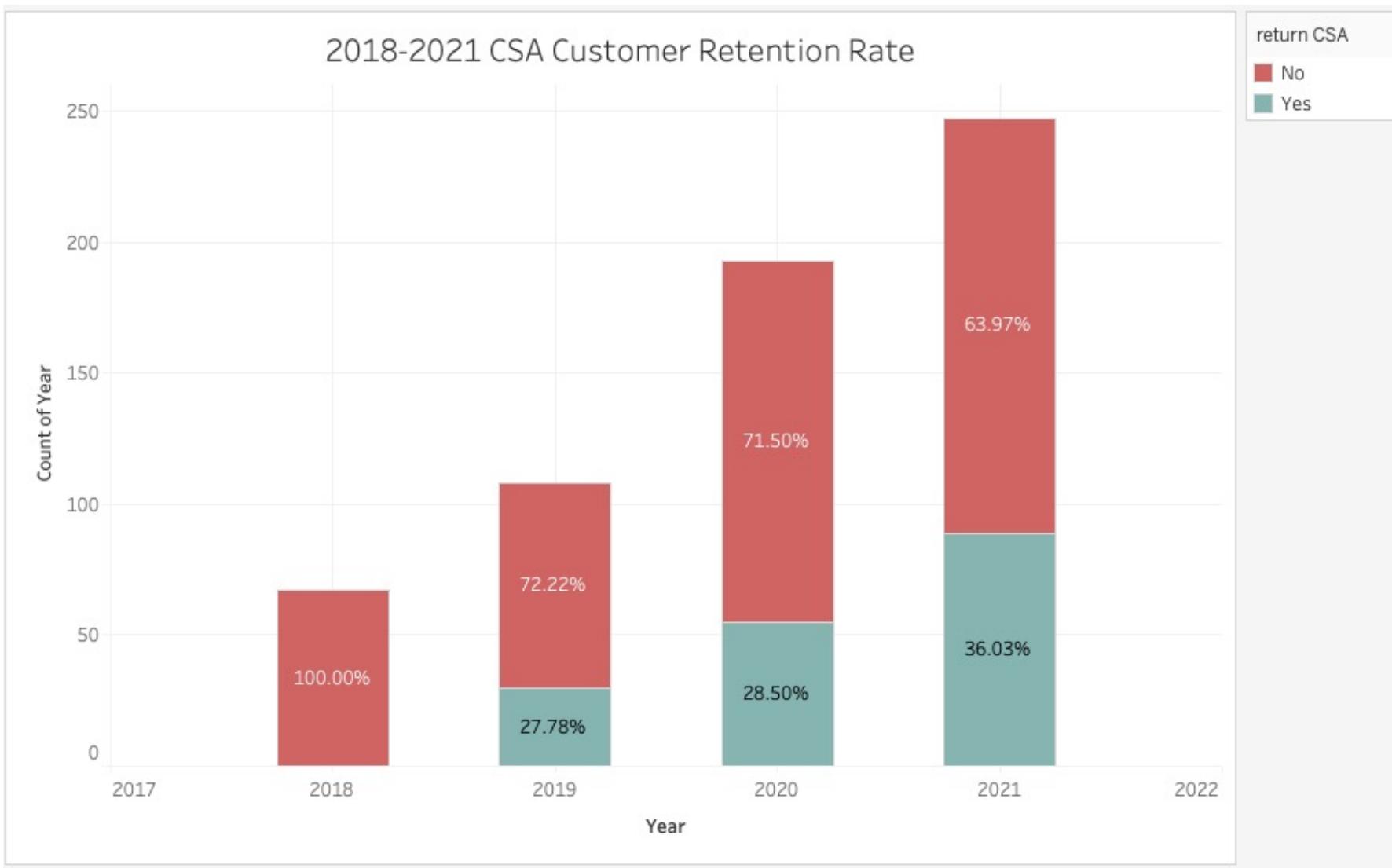




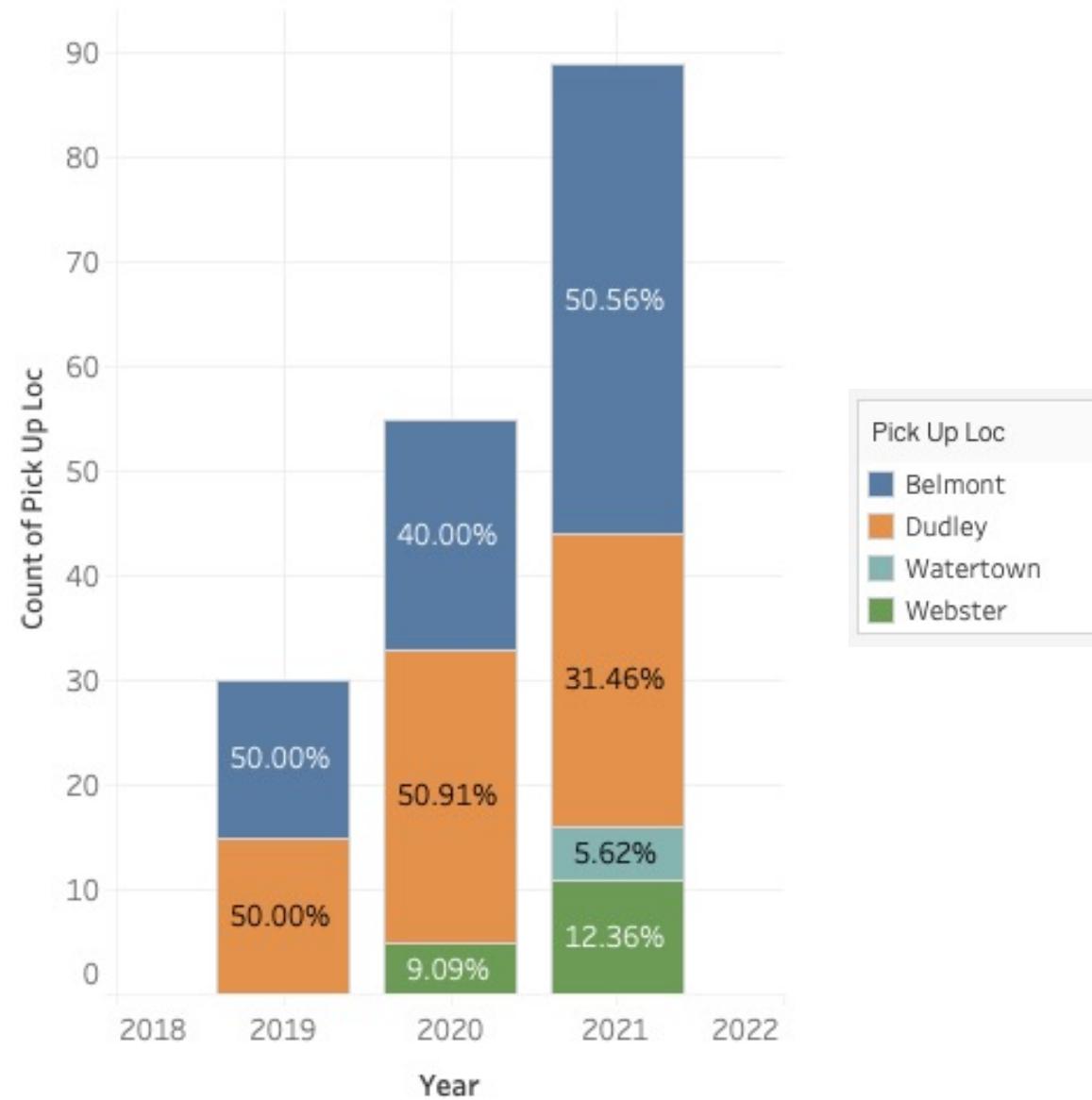
Customer Retention rate Vs. Pick Up Locations 2015-2021



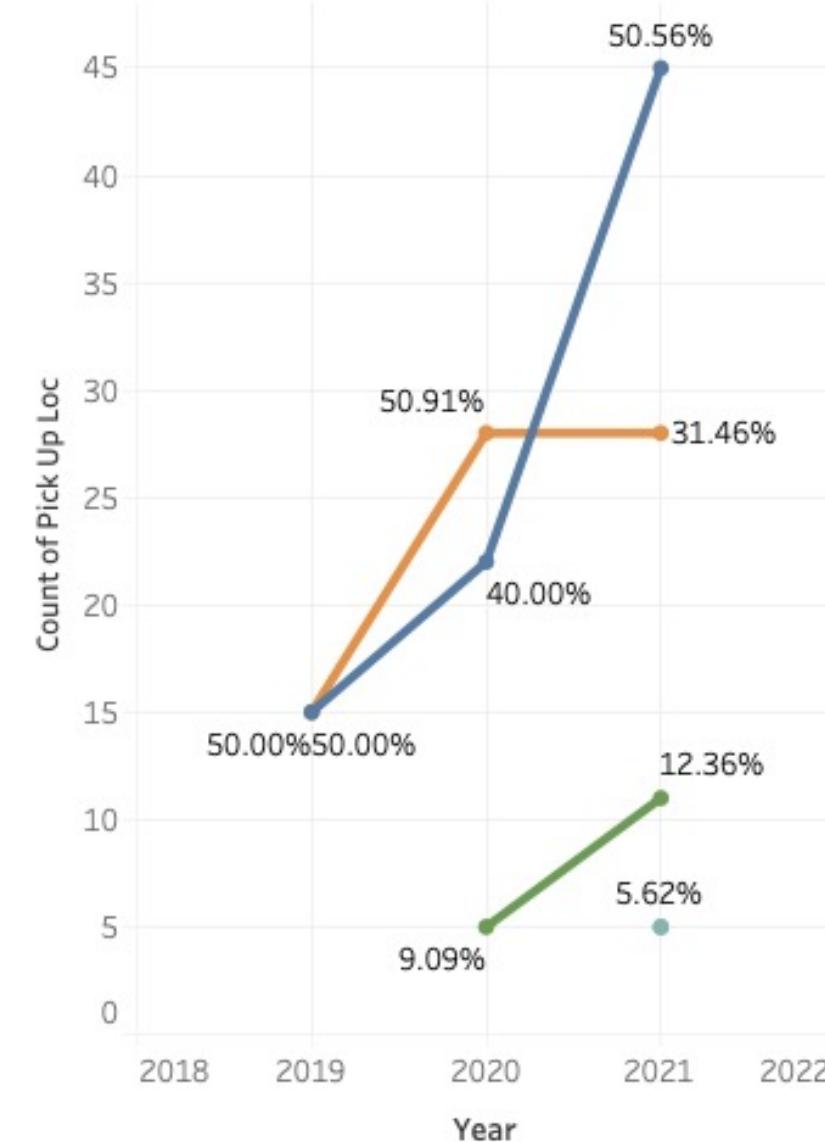
Part II : CSA Data Visualization



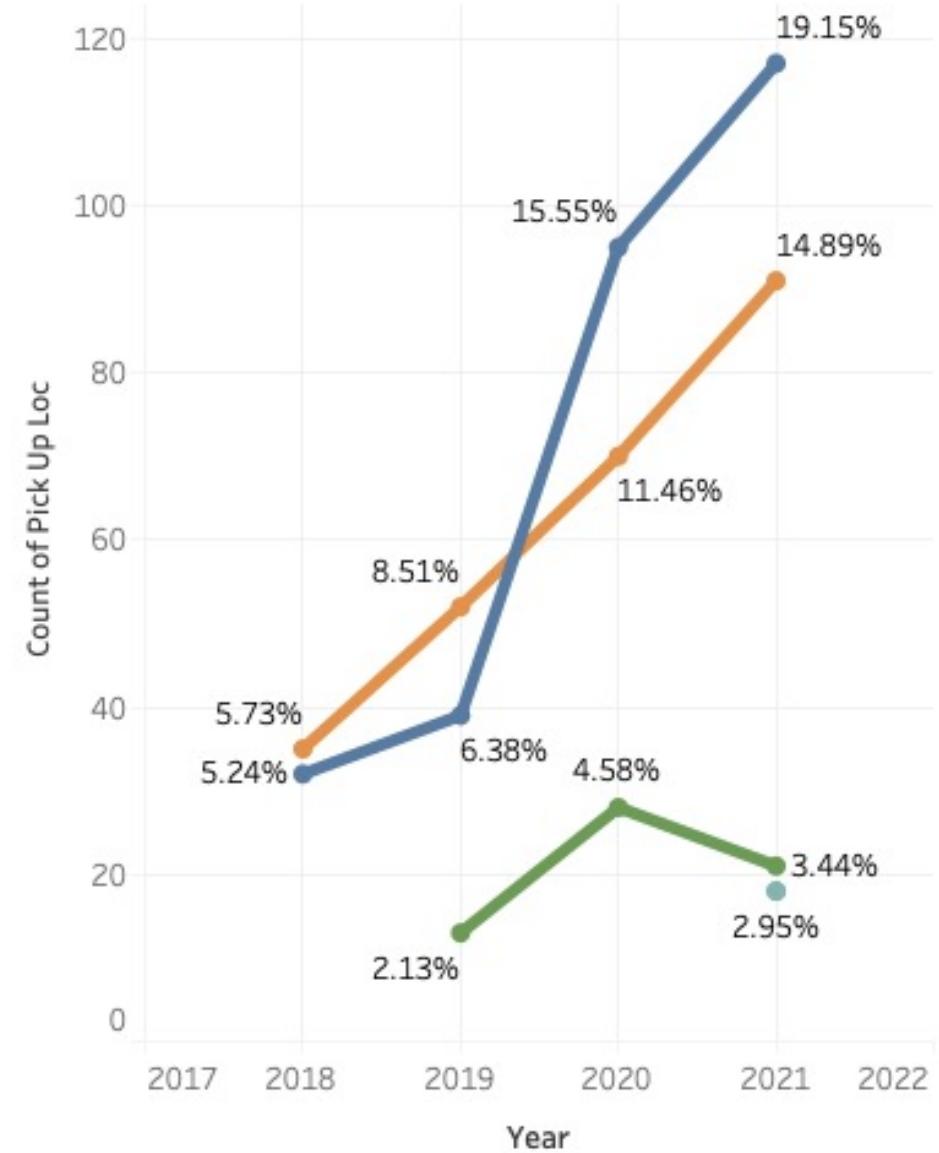
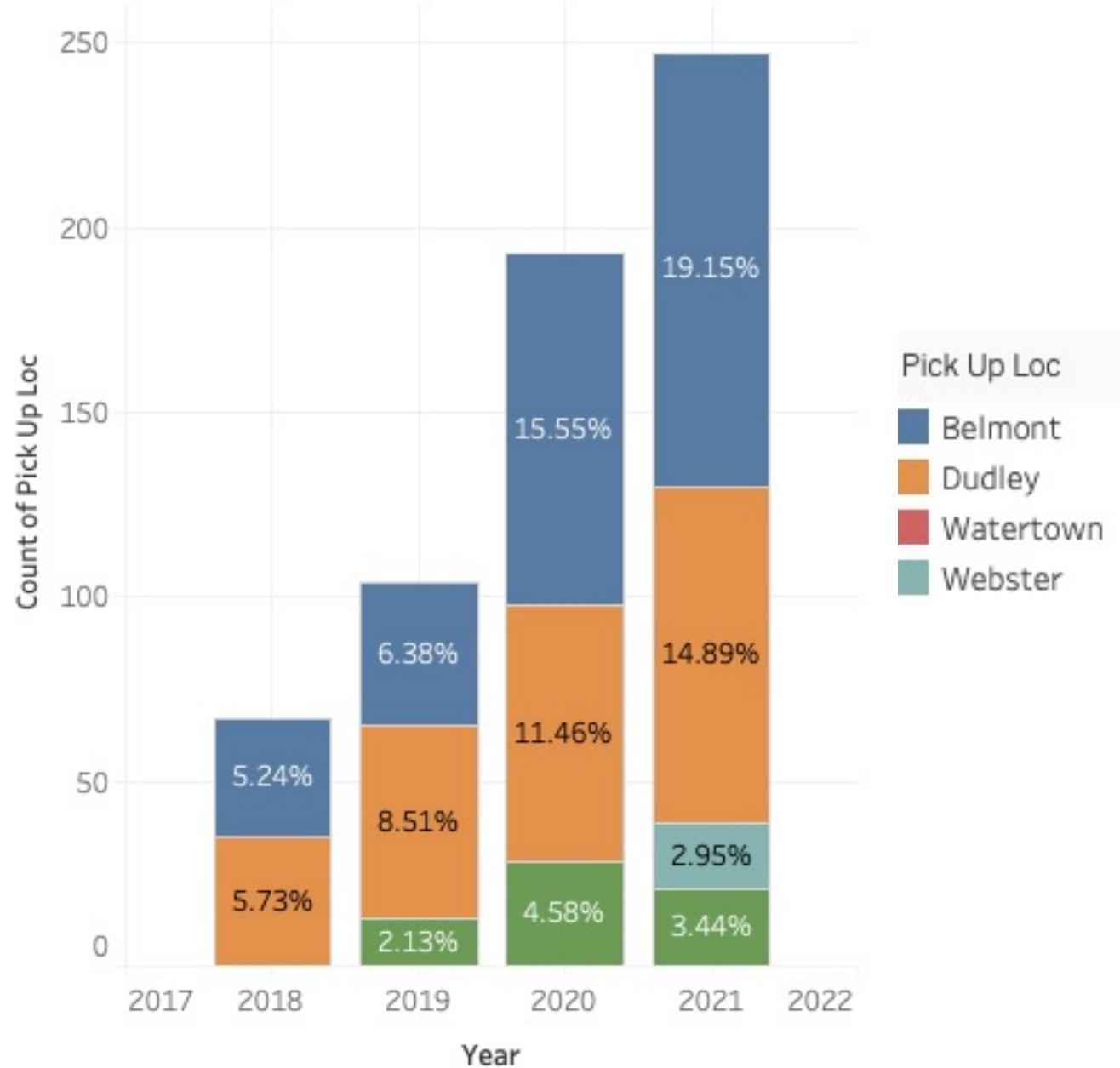
Retrun CSA Vs. Pick-up Locations



Retrun CSA Vs. Pick-up Locations



Total CSA Trends vs. Pick-up Locations



RECOMMENDATIONS:

- **Improve the customer retention to improve the profit.**
(More details please check out the first project: “How Organic farmers Overcome Profit Bottleneck”)
- **Based on the prediction, 2021 customer retention rate will drop.**
(More details for the prediction model building and analysis, please check out the project report: “Customer Churn Prediction Report”)
- **Offer promotion package email to customers who predicted won’t be back**
- **Vegetable’s quality would be the key to improve customer’s retention rate**
(It also would be the competitive advantage of the farm: Differentiation strategy)
- **Setting surveys to gather customer’s feedback:**
<https://www.qualtrics.com/>



THANKS.

