TO: John Doe, CEO of ABC Pizza Company

FROM: XXX, Consultant of DEF Consulting Firm

DATE: July 9, 2020

SUBJECT: Collecting Data on Customer Satisfaction

I was tasked with advising your company (ABC Pizza Company) in terms of collecting and summarizing customer satisfaction data. You propose that on average, ABC Pizza earns higher customer satisfaction score (0~10 scale) than the competitor GHI Pizza Company. To conduct a rigorous statistical analysis, I hereby attach the data collection and presentation methodology to this memorandum.

Data Collection:

(1) In the country, select a certain number of states out of all U.S. states at random.

(2) Select a certain number of pizza places out of all ABC Pizza places at random from within those states.

(3) Each pizza place's customer satisfaction data needs to be collected. To get such data, every customer will be asked by the manager or the attendant to complete a survey on the service of the restaurant they dine in. In addition to some optional questions, customers are required to grade the service on a 0 to 10 scale. Customers who are cooperative will be rewarded a coupon.

Sample survey questions look like these:

     i. How often do you dine at ABC Pizza?

     ii. What did you like about our food menu?

     iii. What did you dislike about our food menu?

     iv. Would you eat at ABC Pizza again?

     v. How would you grade your dining experience at ABC Pizza? Please grade on a 0~10 scale (0 is worst and 10 is best).

     vi. Please write down any other feedback.

(5) After all the data are collected, report them to the Business Analytics Department at the headquarter for further analysis.

Presentation Methodology:

The variable of interest in our analysis is customer satisfaction. It is an ordinal variable with 10 the maximum and 0 the minimum. If the sampling methodology described in the above section is closely

followed, we could calculate the following descriptive statistics and draw corresponding graphical illustrations:

(1) Average customer satisfaction of sampled customers across the country ——histogram.

(2) Standard deviation of customer satisfaction of sampled customers across the country——boxplot.

Finally, using sample statistics, we are able to make inference regarding population parameter. In plain words, based on a certain confidence level, we are capable of inferring the customer satisfaction of all the ABC Pizza places in the country. You may want to consider put the average customer satisfaction score of ABC Pizza and the statement ("We are 95% confident that this score is within a certain range") on the company advertisement or poster.