

ISDS 361B Term Project: Forecasting Sales

The Karrie Restaurant is located in Portland Oregon. The restaurant has just completed its third year of operation. During this time, the owner sought to establish a reputation for the restaurant as a high quality during the establishment that specializes in fresh seafood. The efforts made by the owner and her staff have proven successful, and her restaurant has become one of the best and fastest-growing restaurants.

The owner has concluded that, to plan better for the growth of the restaurant in the future, she needs to develop a system that will enable her to forecast food and beverage sales. Owner has the following data on total food and beverage sales for the 3 years of operation.

Food and Beverage Sales for the Karrie Restaurant (\$1000)

Month	First Year	Second Year	Third Year
January	242	263	282
February	235	238	255
March	232	247	265
April	178	193	205
May	184	193	210
June	140	149	160
July	145	157	166
August	152	161	174
September	110	122	126
October	130	130	148
November	152	167	173
December	206	230	235

Managerial Report

1. Graph the Time Series and analyze the graph.
2. Analyze the data using the 5 Time Series Models and identify the Best Model. Support your answer.
3. An analysis of the seasonality of the data. Indicate the seasonal indexes for each month, and comment on the high and low seasonal months. Do the seasonal indexes make intuitive sense? Discuss.
4. Is the Best Model produces in-control forecast errors? Perform the test and discuss the results.
5. Use the Best Model to forecast sales for January of the 4th year.
6. Assume that January sales for the 4th year turned out to be \$295,000. What is your forecast error? If this error is large, what can you do to get a more accurate forecast.
7. Include detailed calculations of your analysis and Excel copies in the appendix of your report.
8. Your report should include:
 - A cover page which clearly shows your name and the project.
 - A short introduction paragraph that gives the background of your study and brief summary of what you have done in the report
 - A discussion section covering the different analyses you have carried out and comments on the results.
 - A conclusion section that wraps up and give recommendations based on your analyses.