

Assignment Content

Resources: [Pastas R Us, Inc. Database](#) & Microsoft Excel®, Wk 1: Descriptive Statistics Analysis Assignment

Purpose

This assignment is intended to help you learn how to apply statistical methods when analyzing operational data, evaluating the performance of current marketing strategies, and recommending actionable business decisions. This is an opportunity to build critical-thinking and problem-solving skills within the context of data analysis and interpretation. You'll gain a first-hand understanding of how data analytics supports decision-making and adds value to an organization.

Scenario:

Pastas R Us, Inc. is a fast-casual restaurant chain specializing in noodle-based dishes, soups, and salads. Since its inception, the business development team has favored opening new restaurants in areas (within a 3-mile radius) that satisfy the following demographic conditions:

- Median age between 25 – 45 years old
- Household median income above national average
- At least 15% college educated adult population

Last year, the marketing department rolled out a Loyalty Card strategy to increase sales. Under this program, customers present their Loyalty Card when paying for their orders and receive some free food after making 10 purchases.

The company has collected data from its 74 restaurants to track important variables such as average sales per customer, year-on-year sales growth, sales per sq. ft., Loyalty Card usage as a percentage of sales, and others. A key metric of financial performance in the restaurant industry is annual sales per sq. ft. For example, if a 1200 sq. ft. restaurant recorded \$2 million in sales last year, then it sold \$1,667 per sq. ft.

Executive management wants to know whether the current expansion criteria can be improved. They want to evaluate the effectiveness of the Loyalty Card marketing strategy and identify feasible, actionable opportunities for improvement. As a member of the analytics department, you've been assigned the responsibility of conducting a thorough statistical analysis of the company's available database to answer executive management's questions.

Report:

Write a 750-word statistical report that includes the following sections:

- Section 1: Scope and descriptive statistics
- Section 2: Analysis
- Section 3: Recommendations and Implementation

Section 1 - Scope and descriptive statistics

- State the report's objective.
- Discuss the nature of the current database. What variables were analyzed?
- Summarize your descriptive statistics findings from Excel. Use a table and insert appropriate graphs.

Section 2 - Analysis

- Using Excel, create scatter plots and display the regression equations for the following pairs of variables:
- "BachDeg%" versus "Sales/SqFt"
- "MedIncome" versus "Sales/SqFt"
- "MedAge" versus "Sales/SqFt"
- "LoyaltyCard(%)" versus "SalesGrowth%"
- In your report, include the scatter plots. For each scatter plot, designate the type of relationship observed (increasing/positive, decreasing/negative, or no relationship) and determine what you can conclude from these relationships.

Section 3: Recommendations and implementation

- Based on your findings above, assess which expansion criteria seem to be more effective. Could any expansion criterion be changed or eliminated? If so, which one and why?
- Based on your findings above, does it appear as if the Loyalty Card is positively correlated with sales growth? Would you recommend changing this marketing strategy?
- Based on your previous findings, recommend marketing positioning that targets a specific demographic. (Hint: Are younger people patronizing the restaurants more than older people?)
- Indicate what information should be collected to track and evaluate the effectiveness of your recommendations. How can this data be collected? (Hint: Would you use survey/samples or census?)