Primer on Business Analytics with Python

Module 2: Basic Statistical Tests and Regression Analysis

Introduction

- Statistical tests and regression analysis are vital tools in data science.
- They are key in hypothesis testing, understanding relationships, and making prediction
- This module will cover basic statistical tests like t-test, ANOVA, and introduce regressio

Learning Objectives

- Understand the basics of hypothesis testing.
- Learn how to perform a t-test and ANOVA in Python.
- Get introduced to linear regression and understand its applications.

Hypothesis Testing

- Hypothesis testing is a method for testing a claim or hypothesis about a parameter in a
- Null hypothesis (H0) vs Alternative hypothesis (Ha).
- Examples in business context: A/B testing, customer satisfaction analysis.

t-test

- A t-test compares the means of two groups.
- Used to determine if the means of two sets of data are significantly different from each
- Business example: Comparing the average sales before and after a marketing campaign

ANOVA (Analysis of Variance)

- ANOVA tests the hypothesis that the means of two or more populations are equal.
- Applications include comparing the performance of different products or marketing str
- Business example: Assessing the impact of different discounts on sales.

Regression Analysis

- Regression analysis estimates the relationship between variables.
- Linear regression is the most simple and commonly used type of regression.
- Business example: Predicting sales based on advertising spend.

Summary

- Covered the basics of hypothesis testing, t-tests, ANOVA, and regression analysis.
- These statistical methods are fundamental in making data-driven business decisions.