Homework 5

Bivariate Statistics One-way ANOVA and Regression Analysis

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Problems

1) ANOVA: Launch SPSS and open the data file Telemarketing.sav

   Assume that in an attempt to maximize profits, a telemarketing company is conducting an experiment to determine which of four scripted sales pitches generates the best revenue. 1500 different telemarketing calls are randomly assigned to one of the four scripts, and the resulting revenue for each call is recorded.

   Run an appropriate ANOVA test for this research design.

2) Regression Analysis: Run a multiple regression analysis on the examrevison.sav dataset, pay particular attention to the 7 Regression diagnostics conditions. This data represents measures from students used to predict how they perform in an exam.

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sales_pitch	n	avg_revenue	sd_avenue
Script A	279	2970.630	947.2344
Script B	351	2669.133	970.9186
Script C	305	2471.292	967.0648
Script D	553	2215.649	943.0035

1 Telemarketing

## 1.1 Data Exploration
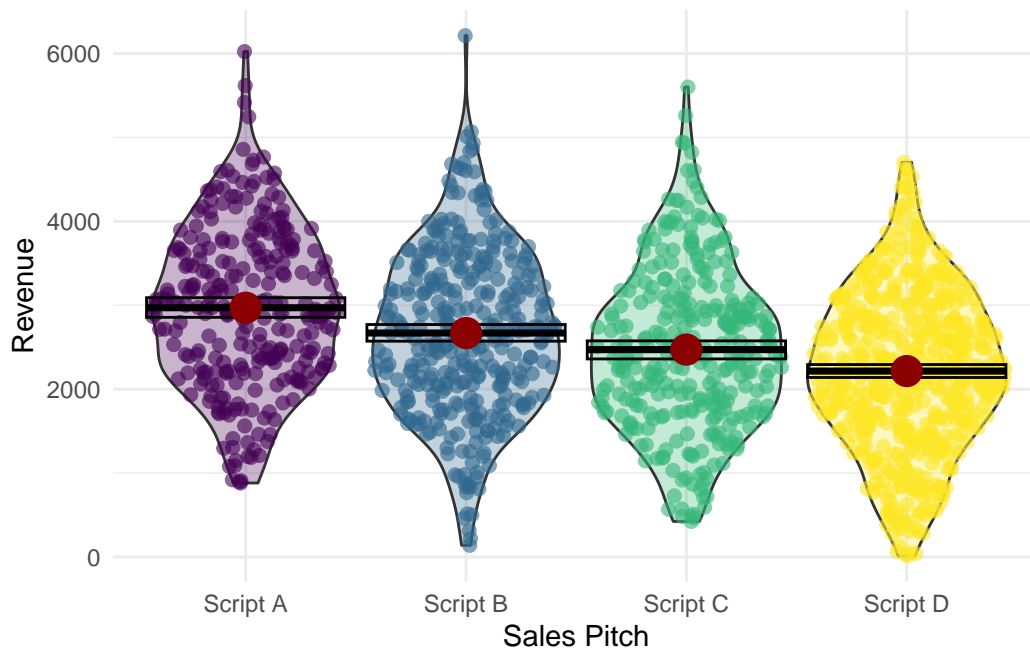
1.2 Assumption Checking

- The outcome variable, revenue, is measured on a ratio scale.

- The groups are mutually exclusive, with four distinct categories: Script A, Script B, Script C, and Script D.

- The grouping variable consists of four levels: Script A, Script B, Script C, and Script D.

- Here

sales_pitch	variable	statistic	p
Script A	revenue	0.9936389	0.2874851
Script B	revenue	0.9960223	0.5244825
Script C	revenue	0.9913526	0.0708032
Script D	revenue	0.9949141	0.0647445

df1	df2	statistic	p
3	1484	0.0924258	0.9642314
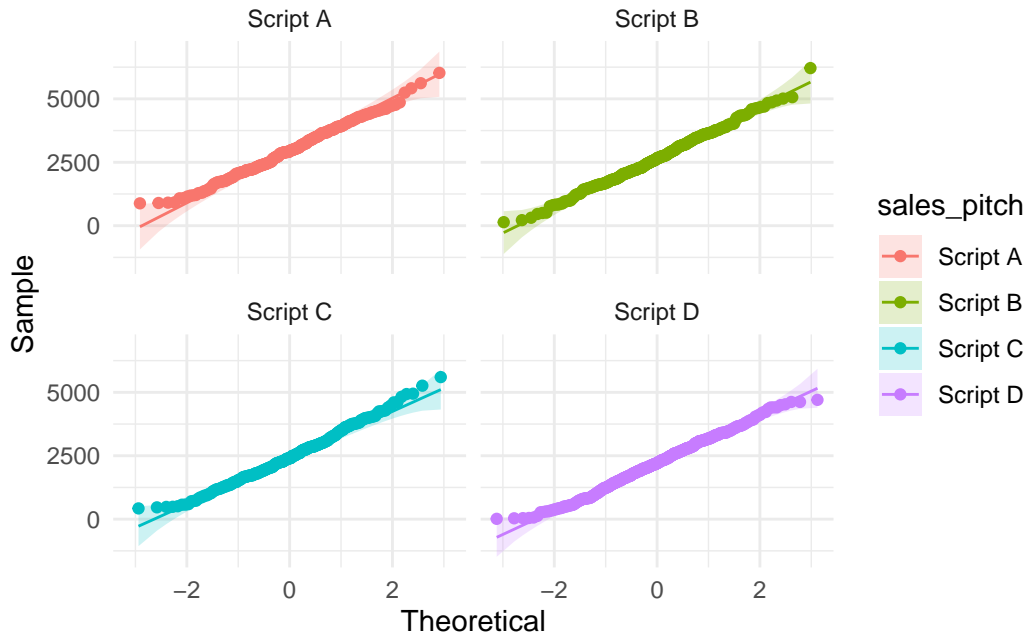
1.3 Hypotheses

H_0: The average `revenue` is equal across all `sales_pitch` groups.

H_1: At least one pair of `sales_pitch` groups has a different average `revenue`.

Effect	DFn	DFd	F	p	p<.05	ges
sales_pitch	3	1484	42.505	0	*	0.079

1.4 Calculating the F statistic

1.5 Testing for the significance of F

1.6 Interpreting F

1.7 Reporting the findings