# Lab Project Paper

*ECO 204 : Statistics for Business and Economics - II*

**East West University, Dhaka**

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# 1 Case Study - 1

## 1.1 Case Study Details

Armand's Pizza Parlors is a chain of Italian-food restaurants located in a five-state area. Armand's most successful locations are near college campuses. The managers believe that quarterly sales for these restaurants are related positively to the size of the student population; that is, restaurants near campuses with a large student population tend to generate more sales than those located near campuses with a small student population. And the company wants to test this ...a..a..

To check the claim the company collected a data set

| **Variable** | **Description** |
|---|---|
| sales | sales of the company |
| population | student population |

Table 1: Variable Description

| Variable | N | Mean | Std. Dev. | Min | Pctl. 25 | Pctl. 75 | Max |
|---|---|---|---|---|---|---|---|
| Restaurant | 10 | | | | | | |
| ... bad | 5 | 50% | | | | | |
| ... good | 5 | 50% | | | | | |
| Population | 10 | 14 | 7.9 | 2 | 8 | 20 | 26 |
| Sales | 10 | 130 | 42 | 58 | 108 | 155 | 202 |

Table 2: Summary Statistics of Armands's Pizza data set

## 1.2 Question 1 a.

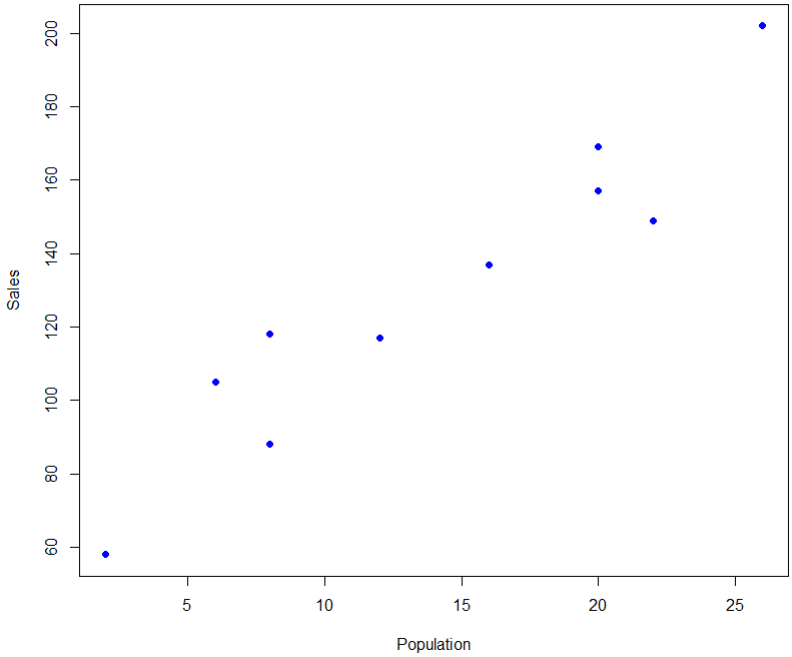


Figure 1: Scatterplot between Sales and Population

The population regression model is

$$Y = \beta_0 + \beta_1 X_1 + \epsilon$$

let's use stargazer for regression table output

| | *Dependent variable:* |
|---|---|
| | Sales |
| Population | 5.000*** |
| | (0.580) |
| Constant | 60.000*** |
| | (9.226) |
| Observations | 10 |
| $R^2$ | 0.903 |
| Adjusted $R^2$ | 0.891 |
| Residual Std. Error | 13.829 (df = 8) |
| F Statistic | 74.248*** (df = 1; 8) |
| *Note:* | *p<0.1; **p<0.05; ***p<0.01 |

Table 3: Regression Results

### 1.3 Question 1 b.

as

# 2 Case Study - 2

## 2.1 Case Study Details

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| Variables | Explanations |
|---|---|
| Sales | Company Sales (in 1000s) |
| Population | Student Population in a particular area |

Table 4: Variable Details in the data set

## 2.2 Question 2 a.

asas

## 2.3 Question 2 b.

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# 3 Case Study - 3

## 3.1 Case Study Details

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| Variables | Explanations |
|---|---|
| Sales | Company Sales (in 1000s) |
| Population | Student Population in a particular area |

Table 5: Variable Details in the data set

## 3.2 Question 3 a.

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## 3.3 Question 3 b.

as

## References