Questions: Introduction to linear regresssion

Flora Green

Summary

A selection of questions for the study guide on introduction to linear regression.

Before attempting these questions, it is highly recommended that you read Guide: Introduction to linear regression.

Q1

This question is about the regression line of a simple linear regression model.

1.1. What does the regression parameter α represent?

1.2. What does the regression parameter β represent?

Q2

This question is about the method of least squares estimation.

2.1. What is a 'residual'?

2.2. What is the purpose of least squares estimation?

Q3

You should use Calculator: Simple linear regression, or another similar calculator, to do this question.

This question uses the following set of data, which is from a sweet shop called Cantor's Confectionery.

Cantor's Confectionery recorded the number of customers and the number of sweets sold on a random sample of 10 days in a particular year:

Number of customers	Number of sweets sold
43	188
54	197
65	215
42	217
68	233
49	244
63	254
57	256
71	274
47	286
75	291
67	300

3.1. Estimate the value of α using least squares estimation.

3.2. Estimate the value of β using least squares estimation.

3.3. Using your answers to 3.1., and Q3.2. write the linear regression model.

3.4. By looking at the R^2 coefficient of determination, comment on the suitability of your linear model.

After attempting the questions above, please click this link to find the answers.

Version history and licensing

v1.0: initial version created 12/25 by Flora Green as part of a University of St Andrews VIP project.