Week Five

Help Center

Fundamentals of Multiple Linear Regression Analysis

In previous weeks we covered simple **linear regression** and **polynomial regression**. This week we extend what we've learnt so far and begin exploring multiple linear regression.

We will discover assumptions involved in the multiple linear regression model and also learn various model building techniques. We will also make use of partial F-test, previously covered in **week 4**, to ascertain if a particular variable has a significant impact on the model under consideration.

Throughout this week's lectures, we will see demonstrations of STATA and you will be taught how to read the STATA output and arrive at a conclusion.

Lectures

Please click on the links below to access the video lectures for this first week

- **Multiple Regression: A Graphical Interpretation and Assumptions I**
- **Multiple Regression: Assumptions II and Least Squares Estimation**
- **Multiple Regression: Computer Output**
- **Multiple Regression: A Step by Step Review**
- **Hypothesis Testing I: F-test**
- **Hypothesis Testing II: Partial F-test and Homework**

Lecture Material

Please click on the link below to download the slides of the fifth week

Week Five "Multiple Regression"

Conversations

Please join in the conversations around regression analysis in our **community forums** area. You can ask and answer questions and discover insights and help for yourself and others as we come together to encourage each other in our exploration.

Key Terms

Below are definitions of some important terms covered this week:

- **Stepwise Forward Selection**: This procedure involves starting with no variables in the model and then adding each variable at a step until R^2 gets as high as possible.
- **Stepwise Backward Strategy**: This strategy involves starting with all possible variables in the model and then deleting each variable at a step as long as the reduction in R^2 is not significant.
- **Tolerance**: Tolerance is a measure used in identifying multicollinearity. It is the reciprocal of the variance inflation factor (VIF) i.e. Tolerance = 1/VIF. If the tolerance is less than 0.01 then it is an indicator of multicollinearity.

Homework

Please watch the following video, **Homework Highlights from Week Four**, to review the homework from last week.

Navigate to the **Week Five Homework** page to view and download the homework for this week.

Quiz

After you've gone through the materials for this week please be sure to visit the **quizzes area** to complete this week's quiz.

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