

Fox Module 13 Dummy variable regression

- Dichotomous factors
- Polytomous factors

Read Section 7.1, "Dichotomous factors," on pages 120-124. Insurance class ratemaking uses dichotomous and polytomous factors more than quantitative explanatory variables, so the on-line course stresses this chapter of the textbook.

Illustration: Sex (male vs female) is a dichotomous factor. Age group and territory are polytomous factors.

Graph 7.1 on page 121 shows how omission of a dichotomous factor distorts a regression line.

Know equation 7.1 on page 121. We use this equation for analysis of variance as well.

The equations at the bottom of page 123 show how dichotomous factors affect the slope coefficient. The final exam tests the use of these factors in the regression equations.

Read Section 7.1, "Polytomous factors," on pages 124-129. The pattern is the same as for dichotomous factors. Know equations 7.2 and 7.3 on the bottom of page 125.

F-tests have a null hypothesis that the coefficients are equal, not that they are zero. See equation 7.4 on the bottom of page 126 and the paragraph at the top of page 127. Know equations 7.5 and 7.6 on page 127.

Know the example on page 128-129. The example puts the pieces together, making the logic easier to follow.

Natural science studies use quantitative explanatory variables. Social science and actuarial work use factors, such as sex, smoking, marital status, territory, and type of vehicle.

Final exam questions may ask for the number of dummy variables and the relation of means and regression coefficients. The practice problems show the types of questions.