

## CHAPTER OVERVIEW

### 10: Correlation and Regression

Our interest in this chapter is in situations in which we can associate to each element of a population or sample two measurements  $x$  and  $y$ , particularly in the case that it is of interest to use the value of  $x$  to predict the value of  $y$ . For example, the population could be the air in automobile garages,  $x$  could be the electrical current produced by an electrochemical reaction taking place in a carbon monoxide meter, and  $y$  the concentration of carbon monoxide in the air. In this chapter we will learn statistical methods for analyzing the relationship between variables  $x$  and  $y$  in this context.

- [10.1: Linear Relationships Between Variables](#)
- [10.2: The Linear Correlation Coefficient](#)
- [10.3: Modelling Linear Relationships with Randomness Present](#)
- [10.4: The Least Squares Regression Line](#)
- [10.5: Statistical Inferences About  \$\beta\_1\$](#)
- [10.6: The Coefficient of Determination](#)
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