

STA 3180 Statistical Modelling: Structural Equation Modeling

Extra Practice Problems: Structural Equation Modeling

1. What is the difference between a path coefficient and a regression coefficient?

Solution: A path coefficient is a measure of the strength of the relationship between two variables in a structural equation model, while a regression coefficient is a measure of the strength of the relationship between two variables in a linear regression model. [CORRECT]

2. What is the difference between a latent variable and an observed variable?

Solution: A latent variable is an unobserved variable that is inferred from observed variables, while an observed variable is a variable that is directly measured or observed. [CORRECT]

3. What is the difference between a direct effect and an indirect effect?

Solution: A direct effect is a causal relationship between two variables that is not mediated by any other variables, while an indirect effect is a causal relationship between two variables that is mediated by one or more other variables. [CORRECT]

4. What is the difference between a single-indicator and a multi-indicator latent variable?

Solution: A single-indicator latent variable is a latent variable that is measured by only one indicator, while a multi-indicator latent variable is a latent variable that is measured by multiple indicators. [CORRECT]

5. What is the difference between a confirmatory factor analysis and a structural equation model?

Solution: A confirmatory factor analysis is a type of structural equation model that is used to test the relationships between observed variables and latent variables, while a structural equation model is a type of statistical model that is used to test the relationships between observed and latent variables as well as the relationships between latent variables. [CORRECT]

6. What is the difference between a path diagram and a structural equation model?

Solution: A path diagram is a graphical representation of a structural equation model, while a structural equation model is a mathematical representation of the relationships between observed and latent variables. [CORRECT]

7. What is the difference between a covariance structure and a correlation structure?

Solution: A covariance structure is a type of structural equation model that is used to test the relationships between observed variables, while a correlation structure is a type of structural equation model that is used to test the relationships between latent variables. [CORRECT]

8. What is the difference between a recursive model and a non-recursive model?

Solution: A recursive model is a type of structural equation model in which the effects of one variable on another are assumed to be unidirectional, while a non-recursive model is a type of structural equation model in which the effects of one variable on another are assumed to be bidirectional. [CORRECT]

9. What is the difference between a latent growth curve model and a latent class model?

Solution: A latent growth curve model is a type of structural equation model that is used to model changes in a variable over time, while a latent class model is a type of structural equation model that is used to identify distinct groups of individuals based on their responses to a set of observed variables. [CORRECT]

10. What is the difference between a structural equation model and a path analysis?

Solution: A structural equation model is a type of statistical model that is used to test the relationships between observed and latent variables as well as the relationships between latent variables, while a path analysis is a type of structural equation model that is used to test the relationships between observed variables. [CORRECT]