

Week-04-L-05

Agricultural Statistics in Practice

Regression Path Analysis

Types & Interpretation of Path Coefficients

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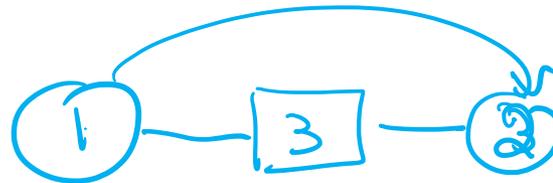


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Types of Path Coefficient:

- **Direct Path Coefficients**: These coefficients represent the direct effect of an independent variable on the dependent variable, without considering any mediating variables.
- **Indirect Path Coefficients**: These coefficients represent the indirect effect of an independent variable on the dependent variable, mediated through one or more intermediate variables.





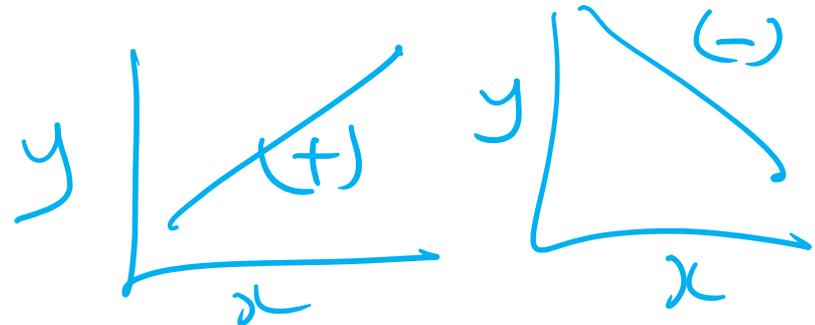
Types of Path Coefficient:

- **Total Path Coefficients**: These coefficients represent the total effect of an independent variable on the dependent variable, including both the direct and indirect effects.
- **Standardized Path Coefficients**: These coefficients are standardized versions of the path coefficients, which allow for the comparison of the magnitudes of effects across different variables.
- **Partial Path Coefficients**: These coefficients represent the unique effect of an independent variable on the dependent variable after accounting for the effects of other independent variables in the model.

$$\underline{\underline{TP}} = \underline{DP} + \underline{IDP}$$

Interpreting Path Coefficients

- **Direct Path Coefficients:** The direct path coefficients indicate the direct impact of an independent variable on the dependent variable. A positive direct path coefficient indicates that an increase in the independent variable leads to an increase in the dependent variable, while a negative direct path coefficient indicates an inverse relationship.
- **Indirect Path Coefficients:** The indirect path coefficients represent the indirect influence of an independent variable on the dependent variable through one or more intermediate variables. They indicate the effect of the independent variable that is mediated by other variables in the model.





Interpreting Path Coefficients

- **Total Path Coefficients:** The total path coefficients encompass both the direct and indirect effects of an independent variable on the dependent variable. They provide a comprehensive measure of the overall influence of the independent variable on the dependent variable.
- **Standardized Path Coefficients:** Standardized path coefficients are scaled versions of the path coefficients that allow for the comparison of the magnitudes of effects across different variables. They are particularly useful for determining the relative importance of different variables in the model.
- **Partial Path Coefficients:** Partial path coefficients represent the unique effect of an independent variable on the dependent variable, after accounting for the effects of other independent variables in the model. They provide insights into the specific contribution of each independent variable to the dependent variable.





Conclusion

- Interpreting path coefficients involves considering their magnitude, sign (positive or negative), and statistical significance.
- Additionally, it is important to examine the context of the study and the theoretical framework to understand the implications of the path coefficients in relation to the research question or hypothesis.

$$y = mx + c$$

value (+ or -)

Thank You



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