The Fuzziness in Regression Models

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ABSTRACT

This study focuses on the fuzziness in regression models. The goal of the study is to develop a test procedure to explicitly examine whether an independent variable has a clear functional relationship with the dependent variable in a specific regression model, or whether their relationship is fuzzy. To this end, we interpret the spread of the regression coefficients as a statistic measuring the fuzziness of the relationship between the corresponding independent variable and the dependent variable. We then derive test distributions based on the null hypothesis that such spreads could have been obtained with data generated by a classical regression model with random errors.