SELF ASSESSMENT OF RISK TOLERANCE

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Abstract

Financial Advisor understanding of client risk tolerance is essential so as to provide effective and compliant advice. Previous research has focused on understanding the relationship between socio-economic factors (gender, education, age, marital status, dependents, income, and wealth) to understand risk tolerance. In addition, research from Hallahan, Faff, & McKenzie (2004) and from Moreschi (2005) considered the ability of respondents to a psychometrically valid risk tolerance questionnaire to self-assess risk tolerance. OLS results indicated that while socio-economic factors are not necessarily the dominant factors in explaining risk tolerance forecast accuracy (and thus, inaccuracy), the evidence is clear that socio-economic factors play a role in the ability of individuals to understand their personal risk tolerance.

Analyzing the ability of individuals to accurately forecast their own risk tolerance is extended in this paper with a naïve Bayes model. A Bayes model can be used for classification purposes to predict the value of a dependent variable on a number of feature variables. We use a Bayes model to predict whether an investor is more likely to underestimate or overestimate his/her risk tolerance based on particular socio-economic factors. The dependent variable in the model is the difference between a respondent's calculated risk tolerance score (RTS) and his/her self-assessed risk tolerance score (SRTS). The feature variables are gender, education, age, marital status, dependents, income, and wealth. The structure of the model is simplified by assuming that the values of the feature variables are independent, given a value for the dependent variable. This strong independence assumption allows us to find parameters for the model by estimating seven one-dimensional conditional probability density functions. Once the model is established, a probability distribution for the error in the investor's risk tolerance score prediction can be established based on their observed socio-economic factors. Initial results suggest the Bayes model to be more robust than OLS.