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Oral Communications

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Daisy Assmann Lima, Philipp Ehrl (Universidade Católica de Brasília e Defensoria Pública da União)
Individualistic Culture and Entrepreneurial Opportunities

Abstract: The present paper evaluates the effect of living in an individualistic society on entrepreneurial opportunities using cross-country data from the Global Entrepreneurship Index (GEI) in 2017.Individualism is a social trait that emphasizes freedom and rewards the personal achievements. We choose combine the fractional probit regression model with an instrumental variable approach through the conditional mixed-process (CMP) framework implemented by David Roodman's cmp command in the Stata. One of the reasons to use this method is that we can jointly estimate two or more equations with linkages among their error processes. And the individual equations need not be classical regressions with a continuous dependent variable. So instead of two linear OLS regressions in the usual 2SLS estimation, our IV-FPRM model performs a two-step procedure with two fractional probit estimations. Then we find that the number of opportunity startups (as opposed to necessity startups) is higher in individualistic countries. Part of this effect occurs because individualistic people perceive opportunities in a optimistic way, because they pretend to realize personal aims and because startups in individualistic countries are more innovative. These findings are robust to differences in institutions, religious affiliation, fertility, unemployment and education.

Demerson Andre Polli, Carlos Alberto de Ribeiro Diniz (UFSCar/USP)
Appraising products (or services) using a discrete scale: a generalization to the CUB model.

Abstract: The present paper evaluates the effect of living in an individualistic society on entrepreneurial opportunities using cross-country data from the Global Entrepreneurship Index (GEI) in 2017.Individualism is a social trait that emphasizes freedom and rewards the personal achievements. We choose combine the fractional probit regression model with an instrumental variable approach through the conditional mixed-process (CMP) framework implemented by David Roodman's cmp command in the Stata. One of the reasons to use this method is that we can jointly estimate two or more equations with linkages among their error processes. And the individual equations need not be classical regressions with a continuous dependent variable. So instead of two linear OLS regressions in the usual 2SLS estimation, our IV-FPRM model performs a two-step procedure with two fractional probit estimations. Then we find that the number of opportunity startups (as opposed to necessity startups) is higher in individualistic countries. Part of this effect occurs because individualis-

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Diego Nascimento, Osvaldo Anacleto, Lilia Costa, Taiza Santos, Francisco Louzada (UFSCar/USP)
Multivariate time series high-dimensional shrinkage with dynamic graphical modeling

Abstract: Dynamic graphical models can be a good alternative to solve the challenge in analyzing/forecasting high-dimensional data. Represented as a graph, the estimation of network dynamics, through this class of models, aims to ensure stable inference and computationally feasible. Therefore, this work aims to compare the sparse Time Series Chain Graphical Model versus Multiregression Dynamic Model (MDM). As an exemplification, some extensions will be discussed regarding the empirical application which involves understanding causal mechanisms that underpin neural communication, using biosignals e.g. Electroencephalogram (EEG), regarding the safety of dose-response in electrical stimulation in a manipulation of human verticality.

Elizbeth Chipa Bedia, Vicente Garibay Cancho (UFSCar/USP)
Analysis of semi-competing risks data using Illness–Death processes with shared frailty inverse Gaussian: Application in colon cancer data.

Abstract: In semi-competing risks situation, which is a generalization of competing risks, only two events are generally considered, one terminal and one non-terminal. In this situation the terminal event (e.g. death) censors the non-terminal event (e.g. recurrence), while the occurrence of the non-terminal event does not prevent the terminal event from occurring. Usually, the two events are correlated. In this work, we study the modelling of semi-competing risks using the illness-death model with shared frailty. In this model the dependency between the terminal and non-terminal failure time is incorporated through of a shared frailty. We propose a shared frailty inverse Gaussian, as an alternative to the usually used Gamma. We introduce Weibull parametric models for the conditional transition rates. Maximum likelihood estimation is performed to fit the model to data set. First, a simulation study is provided to evaluate the performance of the maximum likelihood method in estimating parameters. Then the model is applied to colon cancer data sets.

Luciane Graziele Pereira, Sérgio Luiz Monteiro Salles-Filho (UNICAMP)
Data envelopment analysis (DEA) and multivariate analysis (MVA): integrating methods to analyze efficiency in the allocation of resources at UNICAMP

Abstract: Data Envelopment Analysis (DEA) is a non-parametric technique for comparing input and output data aiming to measure the efficiency of each decision making units (DMU). Through this analysis, it is possible to define an efficiency frontier, which can be used as a benchmarking for others DMUs. On the other hand, statistical multivariate analysis (MVA) scale models highlight important aspects of the information contained in the data, as with Multidimensional Scaling. These models work on the basis of proximity measures between pairs of objects. In Factorial Analysis (FA) and Principal Component Analysis (PCA), correlation coefficients are usually used, and scale models may use different measures of proximity. The aim of our research is integrate the Data Envelopment Analysis and statistical multivariate analysis to measure the efficiency of the different teaching and research units that compose UNICAMP. The concept of efficiency considers the observation of such units in the formation of people and in scientific production, from the use of human and financial resources. Utilizing our analysis, the policymakers can set goals for efficiency improvements, since efficiency in teaching and research are among the university's strategic objectives

Victor Coscrato, Marco Inácio, Rafael Izbicki (UFSCar/USP)
The NN-stacking: feature weighted linear stacking through neural networks

Abstract: Ensemble methods are known to be great boosters for prediction performance of regression methods. A simple way to ensemble regression estimators is by combining them linearly, as done by Breiman. Even though such approach is useful from an interpretative perspective, it often does not lead to great predictive power. In this work, we propose a nove lmethod called NN-Stacking, a linear ensembler that flexibilizes Breiman's method by allowing non static coefficients. The methods uses neural networks to optimize a squared loss function for obtaining optimal estimates for the stacking coefficients. We show that while our approach keeps the interpretative features of Breiman's method, it leads to better predictive power.