Ivan Jacob Agaloos Pesigan

August 14, 2024

References

Andrews: Heteroskedasticity and autocorrelation consistent covariance matrix estimation
                                                                    Andrews-1991

Donald W. K. Andrews. "Heteroskedasticity and autocorrelation consistent covariance matrix estimation". In: *Econometrica* 59.3 (May 1991), p. 817. DOI: 10.2307/2938229.

Abstract: This paper is concerned with the estimation of covariance matrices in the presence of heteroskedasticity and autocorrelation of unknown forms. Currently available estimators that are designed for this context depend upon the choice of a lag truncation parameter and a weighting scheme. Results in the literature provide a condition on the growth rate of the lag truncation parameter as $T \to \infty$ that is sufficient for consistency. No results are available, however, regarding the choice of lag truncation parameter for a fixed sample size, regarding data-dependent automatic lag truncation parameters, or regarding the choice of weighting scheme. In consequence, available estimators are not entirely operational and the relative merits of the estimators are unknown. This paper addresses these problems. The asymptotic truncated mean squared errors of estimators in a given class are determined and compared. Asymptotically optimal kernel/weighting scheme and bandwidth/lag truncation parameters are obtained using an asymptotic truncated mean squared error criterion. Using these results, data-dependent automatic bandwidth/lag truncation parameters are introduced. The finite sample properties of the estimators are analyzed via Monte Carlo simulation.

Andrews et al.: An improved heteroskedasticity and autocorrelation consistent covariance matrix estimator
<div align="right">Andrews-Monahan-1992</div>

Donald W. K. Andrews and J. Christopher Monahan. "An improved heteroskedasticity and autocorrelation consistent covariance matrix estimator". In: *Econometrica* 60.4 (July 1992), p. 953. DOI: 10.2307/2951574.

Bollen et al.: Direct and indirect effects: Classical and bootstrap estimates of variability
<div align="right">Bollen-Stine-1990</div>

Kenneth A. Bollen and Robert Stine. "Direct and indirect effects: Classical and bootstrap estimates of variability". In: *Sociological Methodology* 20 (1990), p. 115. DOI: 10.2307/271084.

Abstract: The decomposition of effects in structural equation models has been of considerable interest to social scientists. Finite-sample or asymptotic results for the sampling distribution of estimators of direct effects are widely available. Statistical inferences about indirect effects have relied exclusively on asymptotic methods which assume that the limiting distribution of the estimator is normal, with a standard error derived from the delta method. We examine bootstrap procedures as another way to generate standard errors and confidence intervals and to estimate the sampling distributions of estimators of direct and indirect effects. We illustrate the classical and the bootstrap methods with three empirical examples. We find that in a moderately large sample, the bootstrap distribution of an estimator is close to that assumed with the classical and delta methods but that in small samples, there are some differences. Bootstrap methods provide a check on the classical and delta methods when the latter are applied under less than ideal conditions.

Cooper et al.: Drinking to regulate positive and negative emotions: A motivational model of alcohol use
<div align="right">Cooper-Frone-Russell-etal-1995</div>

M. Lynne Cooper et al. "Drinking to regulate positive and negative emotions: A motivational model

Abstract: The present study proposed and tested a motivational model of alcohol use in which people are hypothesized to use alcohol to regulate both positive and negative emotions. Two central premises underpin this model: (a) that enhancement and coping motives for alcohol use are proximal determinants of alcohol use and abuse through which the influence of expectancies, emotions, and other individual differences are mediated and (b) that enhancement and coping motives represent phenomenologically distinct behaviors having both unique antecedents and consequences. This model was tested in 2 random samples (1 of adults, 1 of adolescents) using a combination of moderated regression and path analysis corrected for measurement error. Results revealed strong support for the hypothesized model in both samples and indicate the importance of distinguishing psychological motives for alcohol use.

Dumenci et al.: A latent trait-state model of adolescent depression using the Center for Epidemiologic Studies-Depression Scale — Dumenci-Windle-1996

Abstract: Utilized the latent trait-state model for estimating stable and changing components of depressive symptomology in adolescents. The factorial structure of the Center for Epidemiologic Studies-Depression Scale (CES-D) was assessed separately for males and females at 4 measurement occasions, at 6-mo intervals. The variance decomposition of general trait, state, specific trait, and random error parameters for the CES-D scores was estimated simultaneously and tested statistically. Parameter estimates indicated that the CES-D measured both trait- and state-depression about equally well, and that the trait-specific variance parameter was statistically significant, but substantially smaller than those associated with general trait- and state-depression. Findings are

discussed with regard to depressive mood fluctuations among adolescents and the potential usefulness of the latent trait-state model to capture such dynamic features of development.

Kenny et al.: The trait-state-error model for multiwave data.   Kenny-Zautra-1995

Abstract: Although researchers in clinical psychology routinely gather data in which many individuals respond at multiple times, there is not a standard way to analyze such data. A new approach for the analysis of such data is described. It is proposed that a person's current standing on a variable is caused by 3 sources of variance: a term that does not change (trait), a term that changes (state), and a random term (error). It is shown how structural equation modeling can be used to estimate such a model. An extended example is presented in which the correlations between variables are quite different at the trait, state, and error levels.

Li et al.: Large-sample significance levels from multiply imputed data using moment-based statistics and an F reference distribution   Li-Raghunathan-Rubin-1991

Abstract: We present a procedure for computing significance levels from data sets whose missing values have been multiply imputed data. This procedure uses moment-based statistics, $m \leq 3$ repeated imputations, and an F reference distribution. When $m = \infty$, we show first that our procedure is essentially the same as the ideal procedure in cases of practical importance and, second, that its deviations from the ideal are basically a function of the coefficient of variation of

the canonical ratios of complete to observed information. For small m our procedure's performance is largely governed by this coefficient of variation and the mean of these ratios. Using simulation techniques with small m, we compare our procedure's actual and nominal large-sample significance levels and conclude that it is essentially calibrated and thus represents a definite improvement over previously available procedures. Furthermore, we compare the large-sample power of the procedure as a function of m and other factors, such as the dimensionality of the estimand and fraction of missing information, to provide guidance on the choice of the number of imputations; generally, we find the loss of power due to small m to be quite modest in cases likely to occur in practice.

MacKinnon: Analysis of mediating variables in prevention and intervention research
MacKinnon-1994

David P. MacKinnon. "Analysis of mediating variables in prevention and intervention research". In: *NIDA research monograph* 139 (1994), pp. 127–153.

Abstract: Mediational analysis is one way to test specific hypotheses derived from theory. Although this analysis has been suggested in the prevention literature, mediation analysis rarely is conducted. As the field of prevention matures, more questions about how prevention programs work (or fail to work) will emerge. Studies of mediation can address these questions, thereby reducing the cost and enhancing the impact of prevention programs. The methods outlined here can be applied in the evaluation of primary, secondary, and tertiary prevention programs. Since most prevention studies include measurement of some mediating constructs, mediation effects can be assessed on many existing data sets. Mediation analysis can be used to test ideas about prevention.

Mackinnon et al.: Estimating mediated effects in prevention studies
Mackinnon-Dwyer-1993

David P. Mackinnon and James H. Dwyer. "Estimating mediated effects in prevention studies". In: *Evaluation Review* 17.2 (Apr. 1993), pp. 144–158. DOI: 10.1177/0193841x9301700202.

Abstract: The purpose of this article is to describe statistical procedures to assess how prevention and intervention programs achieve their effects. The analyses require the measurement of intervening or mediating variables hypothesized to represent the causal mechanism by which the prevention program achieves its effects. Methods to estimate mediation are illustrated in the evaluation of a health promotion program designed to reduce dietary cholesterol and a school-based drug prevention program. The methods are relatively easy to apply and the information gained from such analyses should add to our understanding of prevention.

Muthén et al.: General longitudinal modeling of individual differences in experimental designs: A latent variable framework for analysis and power estimation.

Muthen-Curran-1997

Abstract: The generality of latent variable modeling of individual differences in development over time is demonstrated with a particular emphasis on randomized intervention studies. First, a brief overview is given of biostatistical and psychometric approaches to repeated measures analysis. Second, the generality of the psychometric approach is indicated by some nonstandard models. Third, a multiple-population analysis approach is proposed for the estimation of treatment effects. The approach clearly describes the treatment effect as development that differs from normative, control-group development. This framework allows for interactions between treatment and initial status in their effects on development. Finally, an approach for the estimation of power to detect treatment effects in this framework is demonstrated. Illustrations of power calculations are carried out with artificial data, varying the sample sizes, number of timepoints, and treatment effect sizes. Real data are used to illustrate analysis strategies and power calculations. Further modeling extensions are discussed.

Gary W. Oehlert. "A note on the delta method". In: *The American Statistician* 46.1 (Feb. 1992), pp. 27–29. ISSN: 1537-2731. DOI: 10.1080/00031305.1992.10475842.

Abstract: The delta method is an intuitive technique for approximating the moments of functions of random variables. This note reviews the delta method and conditions under which delta-method approximate moments are accurate.

Johan H. Oud, John H. van den Bercken, and Raymond J. Essers. "Longitudinal factor score estimation using the Kalman filter". In: *Applied Psychological Measurement* 14.4 (Dec. 1990), pp. 395–418. DOI: 10.1177/014662169001400406.

Abstract: The advantages of the Kalman filter as a factor score estimator in the presence of longitudinal data are described. Because the Kalman filter presupposes the availability of a dynamic state space model, the state space model is reviewed first, and it is shown to be translatable into the LISREL model. Several extensions of the LISREL model specification are discussed in order to enhance the applicability of the Kalman filter for behavioral research data. The Kalman filter and its main properties are summarized. Relationships are shown between the Kalman filter and two well-known cross-sectional factor score estimators: the regression estimator, and the Bartlett estimator. The indeterminacy problem of factor scores is also discussed in the context of Kalman filtering, and the differences are described between Kalman filtering on the basis of a zero-means and a structured-means LISREL model. By using a structured-means LISREL model, the Kalman filter is capable of estimating absolute latent developmental curves. An educational research example is presented. Index terms: factor score estimation, indeterminacy of factor scores, Kalman filter, L,ISREL longitudinal LISREL modeling, longitudinal factor analysis, state space modeling.

Abstract: A recent survey of simulation studies concluded that an overwhelming majority of papers do not report a rationale for the decision regarding the number of Monte Carlo iterations. A surprisingly large number of reports do not contain a justifiable definition of robustness and many studies are conducted with an insufficient number of iterations to achieve satisfactory statistical conclusion validity. The implication is that we do not follow our own advice regarding the management of Type I and Type II errors when conducting Monte Carlo experiments. This paper reports a straightforward application of a well-known procedure for the purpose of objectively determining the exact number of iterations necessary to confidently detect departures from robustness in Monte Carlo results. A table of the number of iterations necessary to detect departures from a series of nominal Type I error rates is included.

Abstract: The Alcohol Use Disorders Identification Test (AUDIT) has been developed from a six-country WHO collaborative project as a screening instrument for hazardous and harmful alcohol consumption. It is a 10-item questionnaire which covers the domains of alcohol consumption, drink-

ing behaviour, and alcohol-related problems. Questions were selected from a 150-item assessment schedule (which was administered to 1888 persons attending representative primary health care facilities) on the basis of their representativeness for these conceptual domains and their perceived usefulness for intervention. Responses to each question are scored from 0 to 4, giving a maximum possible score of 40. Among those diagnosed as having hazardous or harmful alcohol use, 92% had an AUDIT score of 8 or more, and 94% of those with non-hazardous consumption had a score of less than 8. AUDIT provides a simple method of early detection of hazardous and harmful alcohol use in primary health care settings and is the first instrument of its type to be derived on the basis of a cross-national study.

Shapiro et al.: On the treatment of correlation structures as covariance structures
Shapiro-Browne-1990

A. Shapiro and M.W. Browne. "On the treatment of correlation structures as covariance structures". In: *Linear Algebra and its Applications* 127 (1990), pp. 567–587. ISSN: 0024-3795. DOI: 10.1016/0024-3795(90)90362-g.

Abstract: Necessary and sufficient conditions are provided for minimum discrepancy methods, intended for covariance structures, to retain their asymptotic properties in the analysis of correlation structures. Examples of correlation structures satisfying these conditions are considered, and alternative discrepancy functions, which are always appropriate for correlation structures under normality assumptions, are discussed.

Stoffer et al.: Bootstrapping state-space models: Gaussian maximum likelihood estimation and the Kalman filter
Stoffer-Wall-1991

David S. Stoffer and Kent D. Wall. "Bootstrapping state-space models: Gaussian maximum likelihood estimation and the Kalman filter". In: *Journal of the American Statistical Association* 86.416 (Dec. 1991), pp. 1024–1033. DOI: 10.1080/01621459.1991.10475148.

Abstract: The bootstrap is proposed as a method for assessing the precision of Gaussian maximum likelihood estimates of the parameters of linear state-space models. Our results also apply to autoregressive moving average models, since they are a special case of state-space models. It is shown that for a time-invariant, stable system, the bootstrap applied to the innovations yields asymptotically consistent standard errors. To investigate the performance of the bootstrap for finite sample lengths, simulation results are presented for a two-state model with 50 and 100 observations; two cases are investigated, one with real characteristic roots and one with complex characteristic roots. The bootstrap is then applied to two real data sets, one used in a test for efficient capital markets and one used to develop an autoregressive integrated moving average model for quarterly earnings data. We find the bootstrap to be of definite value over the conventional asymptotics.

Tibshirani: Regression shrinkage and selection via the lasso   Tibshirani-1996

Abstract: We propose a new method for estimation in linear models. The 'lasso' minimizes the residual sum of squares subject to the sum of the absolute value of the coefficients being less than a constant. Because of the nature of this constraint it tends to produce some coefficients that are exactly 0 and hence gives interpretable models. Our simulation studies suggest that the lasso enjoys some of the favourable properties of both subset selection and ridge regression. It produces interpretable models like subset selection and exhibits the stability of ridge regression. There is also an interesting relationship with recent work in adaptive function estimation by Donoho and Johnstone. The lasso idea is quite general and can be applied in a variety of statistical models: extensions to generalized regression models and tree-based models are briefly described.

Abstract: Empirical results from epidemiological studies on pain–depression comorbidity in primary care and population samples have shown that: (a) pain is as strongly associated with anxiety as with depressive disorders; (b) characteristics that most strongly predict depression are diffuseness of pain and the extent to which pain interferes with activities; (c) certain psychological symptoms (low energy, disturbed sleep, worry) are prominent among pain patients, while others (guilt, loneliness) are not; (d) depression and pain dysfunction are evident early in the natural history of pain, but dysfunction and distress are often transient; and (e) among initially dysfunctional pain patients whose dysfunction is chronic, depression levels do not improve but neither do they increase over time with chronicity alone. These results seem consistent with these mechanisms of pain–depression comorbidity; (1) a trait of susceptibility to both dysphoric physical symptoms (including pain) and psychological symptoms (including depression), and a state of somatosensory amplification in which psychological distress amplifies dysphoric physical sensations (including pain); (2) psychological illness and behavioural dysfunction being interrelated features of a maladaptive response to pain evident early in the natural history of the condition, and often resolving during an early recovery phase; (3) pain constituting a significant physical and psychological stressor that may induce or exacerbate psychological distress. Thus, pain and psychological illness should be viewed as having reciprocal psychological and behavioural effects involving both processes of illness expression and adaption, as well as pain having specific effects on emotional state and behavioural function.

Wechsler et al.: A gender-specific measure of binge drinking among college students.

Wechsler-Dowdall-Davenport-etal-1995

Henry Wechsler et al. "A gender-specific measure of binge drinking among college students." In: *American Journal of Public Health* 85.7 (July 1995), pp. 982–985. ISSN: 1541-0048. DOI: 10.2105/ajph.85.7.982.