Chapter 1 : A Primer on Regression Artifacts : Donald T. Campbell :

Regression toward the mean is a complex statistical principle that plays a crucial role in any research involving the measurement of change. This primer is designed to help researchers more fully understand this phenomenon and avoid common errors in interpretation.

They are based on a review of research guidelines developed for medical researchers and on our own experience in doing and reviewing software engineering research. The guidelines are intended The guidelines are intended to assist researchers, reviewers, and meta-analysts in designing, conducting, and evaluating empirical studies. Editorial boards of software engineering journals may wish to use our recommendations as a basis for developing guidelines for reviewers and for framing policies for dealing with the design, data collection, and analysis and reporting of empirical studies. Meta-analysis and dynamic modeling of developmental mechanisms by R. However, the precise way in which early repre-sentations might shape adult attachment pat However, the precise way in which early repre-sentations might shape adult attachment patterns is ambiguous, and different per-spectives on this issue have evolved in the literature. According to the prototype perspective, representations of early experiences are retained over time and con-tinue to play an influential role in attachment behavior throughout the life course. In contrast, the revisionist perspective holds that early representations are subject to modification on the basis of new experiences and therefore may or may not re-flect patterns of attachment later in life. In this article, I explore and test mathemat-ical models of each of these theoretical processes on the basis of longitudinal data obtained from meta-analysis. Results indicate that attachment security is moder-ately stable across the first 19 years of life and that patterns of stability are best ac-counted for by prototype dynamics. Summary of the revisionist model. On the basis of the revisionist perspective on stability, a formal model was created incorporating the key mechanisms believed to underlie stabi The Significance of Task Significance: Does task significance increase job performance? Correlational designs and confounded manipulations have prevented researchers from assessing the causal impact of task significance on job performance. To address this gap, 3 field experiments examined the performance effects, relational mechanisms, a To address this gap, 3 field experiments examined the performance effects, relational mechanisms, and boundary conditions of task significance. In Experiment 1, fundraising callers who received a task significance intervention increased their levels of job performance relative to callers in 2 other conditions and to their own prior performance. In Experiment 2, task significance increased the job dedication and helping behavior of lifeguards, and these effects were mediated by increases in perceptions of social impact and social worth. In Experiment 3, conscientiousness and prosocial values moderated the effects of task significance on the performance of new fundraising callers. The results provide fresh insights into the effects, relational mechanisms, and boundary conditions of task significance, offering noteworthy implications for theory, research, and practice on job design, social information processing, and work motivation and performance. Show Context Citation Context The experiments do not entirely rule out the possibility of regression to the mean, but this is an unlikely interpretation in light of the findings that task significance increased performance acro Personalityâ€"relationship transaction in young adulthood by Jens B. Within personality, core Big Five personality traits and surface characteristics global self-worth, perceived peer acceptance, and loneliness were distinguishe Within personality, core Big Five personality traits and surface characteristics global self-worth, perceived peer acceptance, and loneliness were distinguished. Core, but not surface, characteristics at age 12 predicted support from both parents and peers at age 17 after controlling for support at age Support at age 12 predicted surface, but not core, characteristics at age 17 after controlling for personality at age These findings are interpreted within a dual model of personalityâ€"relationship transaction. Core characteristics are relatively stable traits that are largely immune against experiences in relationships and continuously influence their flux and flow. Surface characteristics are more open to relationship influences, and are therefore less stable. The present study is guided by the theoretical framework of dynamic interactionism. It is generally assumed that individuals develop through a dynamic, continuous, and reciprocal transaction with Jens B. A critical reexamination and new

recommendations by Kristopher J. Alan Nicewander - Psychological Methods , " Analysis of continuous variables sometimes proceeds by selecting individuals on the basis of extreme scores of a sample distribution and submitting only those extreme scores to further analysis. This sampling method is known as the extreme groups approach EGA. EGA is often used to achieve greater EGA is often used to achieve greater statistical power in subsequent hypothesis tests. However, there are several largely unrecognized costs associated with EGA that must be considered. The authors illustrate the effects EGA can have on power, standardized effect size, reliability, model specification, and the interpretability of results. Finally, the authors discuss alternative procedures, as well as possible legitimate uses of EGA. The authors urge researchers, editors, reviewers, and consumers to carefully assess the extent to which EGA is an appropriate tool in their own research and in that of others. Conway - Emotion , " All in-text references underlined in blue are linked to publications on ResearchGate, letting you access and read them immediately.

Chapter 2 : A Primer on Regression Artifacts by Donald T. Campbell

Note: Citations are based on reference standards. However, formatting rules can vary widely between applications and fields of interest or study. The specific requirements or preferences of your reviewing publisher, classroom teacher, institution or organization should be applied.

Keith A Second Course in Statistics: Glantz and Bryan K. Quantitative Methods in Population Health: A Primer by Paul D. A Constructive Critique by Richard A. Berk Linear Regression Analysis by G. Shiboski and Charles E. Testing and Interpreting Interactions by Leona S. Aiken and Steven G. Marsh and David R. Rousseeuw and Annick M. Campbell and David A. Models, Methods and Applications by Thomas W. Valente Teaching about Social Networks: Tindall and Todd E. Diggle and Paulo J. Fundamentals for Investigators by Lemuel A. A Regression-based Approach by Andrew F. Hayes Latent Variable Models: Scott Long Structural Equation Modeling: A Second Course edited by Gregory R. Hancock and Ralph O. Marcoulides Structural Equation Modeling: Little Cause and Correlation in Biology: Grace Structural Equation Modeling: Methods for Mediation and Interaction by Tyler J. Hox and Don A. Groves and Mick P. Handcrafting the Standardized Questionnaire by Jean M. Biemer and Lars E. Groves Questions About Questions: Best and Brian S. West and Patricia A. Design and Analysis by Sharon L. Korn and Barry I. Data for Community Planning by Cynthia M. Bourque and Virginia A. Clark Sampling of Populations: Eltinge, and Roderick J. Royall Small Area Estimation by J. Rao Missing data and Small-Area Estimation: Cochran Sample Survey Theory: Forthofer, and Ronald J. Extending the Cox Model by Terry M. Therneau and Patricia M. Box-Steffensmeier and Bradford S. Vermunt Other Applied Choice Analysis: A Primer by David A. Rose and William H. Greene Applied Correspondence Analysis: Design, Conduct, Analysis by James J. An Introduction by Guido W. Imbens and Donald B. Kashy and William L. Cook Effect Sizes for Research: Grissom and John J. Manski Matrix Computations by G. Murnane and John B. A Primer on Evidence by David R. Models, Analysis and Interpretation by D. Gottman The Politics of Large Numbers: Fraser Propensity Score Analysis: Fraser Robust Statistics by Peter J. Tanner and Martin T. Wells Read it Online! Altman, David Machin, Trevor N. Bryant and Martin J. Edited by Lisa L. Mulaik and James H. Slaughter and Lora D. Everitt and Geoff Der, Read it Online! Elliott and Wayne A. Examples Handbook by Michele M. Muller and Bethel A. Timm and Tammy A. Theory and Application by Paul D. A Practical Guide by Paul D. Brocklebank and David A. Sivo and Sean C.

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Regression to the mean can be viewed as far the prediction (the regression line) is from perfection (the perfect correlation line). In the second chapter, we present the mathematics of regression toward the mean and answer commonly asked questions about regression toward the mean or FAQs.

Campbell and David A. Kenny Forward by Charles Reichardt The book is about regression toward the mean: I started this book with Donald T. Don considered regression to the mean to be one of his most important contributions in the field of methodology. The book considers the statistical, social, biological, and political implications of regression to the mean. However, most of the focus is on quasi-experimental evaluations of over-time data. In the first chapter, we describe the phenomenon of regression toward the mean in a non-technical fashion. We avoid presenting formulas but instead focus on a graphical presentation. The emphasis is on the conceptual and not the mathematical. The chapter presents the perfect correlation line see next paragraph , the pair-link diagram, and the Galton squeeze diagram illustrated in the paragraph , all of which are featured throughout the primer. The Galton squeeze dramatically illustrates the more extreme scores regress to the mean. The points on the left are the scores on a pretest, and the points on the right are the posttest means for the various scores on the pretest. A line connects the two points. We see that larger scores at the pretest tend to become smaller at the posttest, and smaller scores tend to become larger: This diagram is also featured in the primer. The jagged line connected by circles is called the over-fitted line, a line in which the means are connected to form a prediction line. The line running through the over-fitted line is the regression line or least-squares line. The flat line is the zero-correlation line what the regression line would be if there was no correlation and the diagonal is the perfect correlation line what the regression line would be if the correlation were one. Correlation can be thought of as the relative distance of the regression line from the zero line. The distance from the perfect correlation line to the regression line measure the amount of regression to the mean. Regression to the mean can be viewed as far the prediction the regression line is from perfection the perfect correlation line. In the second chapter, we present the mathematics of regression toward the mean and answer commonly asked questions about regression toward the mean or FAQs. Among the questions considered are why regression to mean does not produce mediocrity and how regression to the mean can occur when relationships are nonlinear. We also generalize the concept beyond the simplifications of the first chapter. Although this chapter is more mathematical than the first, we still heavily rely on graphical methods. The next six chapters consider regression artifacts, the focus of the primer. In Chapter 3, we show that when a group of persons are measured over time, their average score regresses toward the mean. This chapter presents several illustrations of regression to the mean in everyday life, including the example that rookies of the year in baseball have a sophomore slump. It also considers the often ignored problem of misclassification caused by regression to the mean. The next two chapters consider regression to the mean in the nonequivalent control group design. In this design a treated and control group are measured at two time points. In Chapter 4, we show that matching of scores on a variable only partially controls for group differences. Chapter 5 shows that statistical equating "partialling out" the pretest, like matching, is not totally successful. We argue that statistical controls are usually biased and the likely direction of bias can be determined. Chapter 6 focuses on the measurement of change and describes regression artifacts in change score analysis. We learn that change is a much more difficult topic than might be thought. We show that a person who does not change at all may be the one who really "changed" the most once regression to the mean is controlled! The next two chapters consider regression artifacts in more complicated situations. Chapter 7 considers regression to the mean in time-series research. We focus on the problem that the timing of the intervention often occurs at an extreme point. Chapter 8 considers longitudinal research and focuses on the idea of proximal autocorrelation. For both of these topics we present several examples. In Chapter 9, we review the once popular technique of cross-lagged panel correlation and urge its revival. We show that it can be viewed as special type of multitrait-multimethod matrix. In the final chapter, several themes are reiterated. These themes include the utility of time-reversed analysis, graphical presentation of data, the importance of

design in research, and the consideration of plausible rival hypotheses. We also discuss how forecasters and prognosticators often fail to take into account regression toward the mean. We consider the case of Sally and Sal. The chapter also considers issues of epistemology and the role of common sense in science. Regression to the mean can be very confusing and it has confused many including Nobel prize winners. A goal of the book is to take much of the mystery out of this concept.

Chapter 4 : My Books (David A. Kenny)

About The Book. Regression toward the mean is a complex statistical principle that plays a crucial role in any research involving the measurement of change.

Chapter 5 : CiteSeerX â€" Citation Query A Primer on Regression Artifacts

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Chapter 7 : RegressionToMean - OutcomesMeasurement - ACORN Wiki

Donald Campbell was one of the most respected researchers of all time. This book is a gem. The problem of RA in research is sooo over looked that all researchers need to read this book are re-familiarize themselves with how RA can creep into their research.

Chapter 8 : A primer on regression artifacts / Donald T. Campbell, David A. Kenny. - Version details - Trove

A Primer on Regression Artifacts)] [Author: Donald T. Campbell Regression toward the mean is a complex statistical principle that plays a crucial role.

Chapter 9 : Statistics Books for Loan

propose a preliminary set of research guidelines aimed at stimulating discussion among software researchers. They are based on a review of research guidelines developed for medical researchers and on our own experience in doing and reviewing software engineering research.