Work and Organisational Psychology (Vols. 1-5) - Front Matter

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WORK AND ORGANISATIONAL PSYCHOLOGY

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VOLUME I

Research Methodology

Edited by

Gregory J. Boyle,
John G. O'Gorman and Gerard J. Fogarty

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Organizational Research Methods, 14(2) (2011): 306–330.

2. 'Self-Reports in Organizational Research: Problems and Prospects',
Philip M. Podsakoff and Dennis W. Organ
Journal of Management, 12(4) (1986): 531–544.

3. 'Method Variance in Organizational Research: Truth or Urban Legend?',
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Organizational Research Methods, 9(2) (2006): 221–232.

4. 'Methodological Urban Legends: The Misuse of Statistical Control Variables',
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Organizational Research Methods, 14(2) (2011): 287–305.

5. 'Meta-analytic Procedure and Interpretation of Treatment Outcome and Test Validity for the Practitioner Psychologist', *Ephrem Fernandez and Gregory J. Boyle*
Mike Smith and Valerie Sutherland (eds), *International Review of Professional Issues in Selection and Assessment* (Volume 2) (New York: John Wiley & Sons Ltd, 1996), pp. 109–125.

6. 'The Impact of Research Synthesis Methods on Industrial–Organizational Psychology: The Road from Pessimism to Optimism about Cumulative Knowledge', *David S. DeGeest and Frank L. Schmidt*
Research Synthesis Methods, 1(3–4) (2010): 185–197.

7. ‘Best Practices in Exploratory Factor Analysis: Four Recommendations for Getting the Most from Your Analysis’, *Anna B. Costello and Jason W. Osborne*
Practical Assessment, Research & Evaluation, 10(7) (2005).
http://pareonline.net/getvn.asp?v=10&n=7

8. ‘LISREL Analyses of the RIASEC Model: Confirmatory and Congeneric Factor Analyses of Holland’s Self-Directed Search’, *Gregory J. Boyle and Sergio Fabris*
Personality and Individual Differences: The Official Journal of the International Society for the Study of Individual Differences (ISSID), 13(10) (1992): 1077–1084.

9. ‘Understanding the Results of Multiple Linear Regression: Beyond Standardized Regression Coefficients’, *Kim F. Nimon and Frederick L. Oswald*
Organizational Research Methods, 16(4) (2013): 650–674.

10. ‘Sample Size Requirements for Structural Equation Models: An Evaluation of Power, Bias, and Solution Propriety’, *Erika J. Wolf, Kelly M. Harrington, Shaunna L. Clark and Mark W. Miller*
Educational and Psychological Measurement, 73(6) (2013): 913–934.

11. ‘The Etiology of the Multilevel Paradigm in Management Research’, *John E. Mathieu and Gilad Chen*
Journal of Management, 37(2) Walking New Avenues in Management Research Methods and Theories: Bridging Micro and Macro Domains; Edited by: Herman Aguinis, Brian K. Boyd, Charles A. Pierce and Jeremy C. Short (2011): 610–641.

12. ‘Does Item Homogeneity Indicate Internal Consistency or Item Redundancy in Psychometric Scales?’, *Gregory J. Boyle*
Personality and Individual Differences, 12(3) (1991): 291–298.

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Psychological Assessment, 8(4) (1996): 350–353.

14. ‘On the Use, the Misuse, and the Very Limited Usefulness of Cronbach’s Alpha’, *Klaas Sijtsma*
Psychometrika, 74(1) (2009): 107–120.

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Psychological Bulletin, 124(2) (1998): 262–274.

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Perspectives on Psychological Science, 9(5) (2014): 538–551.

19. 'A Meta-Analytic Study of General Mental Ability Validity for Different Occupations in the European Community', *Jesús F. Salgado, Neil Anderson, Silvia Moscoso, Cristina Bertua, Filip de Fruyt and Jean Pierre Rolland*
Journal of Applied Psychology, 88(6) (2003): 1068–1081.

20. 'Predicting Training Success with General Mental Ability, Specific Ability Tests, and (Un)Structured Interviews: A Meta-analysis with Unique Samples', *Matthias Ziegler, Erik Dietl, Erik Danay, Markus Vogel and Markus Bühner*
International Journal of Selection and Assessment, 19(2) (2011): 170–182.

21. 'Extending Boundaries of Human Resource Concepts and Practices: An Innovative Recruitment Method for Indigenous Australians in Remote Regions', *Cecil A.L. Pearson and Sandra Daff*
Asia Pacific Journal of Human Resources, 49(3) (2011): 325–342.

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Current Directions in Psychological Science, 19(6) (2010): 339–345.

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International Journal of Selection and Assessment, 13(1) (2005): 1–10.

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26. ‘Career Assessment and the Sixteen Personality Factor Questionnaire’, *J.M. Schuerger*
Journal of Career Assessment, 3(2) (1995): 157–175.

27. ‘Personality and Employee Selection: Credibility Regained’, *Cynthia D. Fisher and Gregory J. Boyle*
Asia Pacific Journal of Human Resources, 35(2) (1997): 26–40.

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International Journal of Selection and Assessment, 12(4) (2004): 356–362.

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Journal of Applied Psychology, 85(2) (2000): 237–249.

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Journal of Career Assessment, 11(2) (2003): 205–218.

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Journal of Management, (2013).
http://jom.sagepub.com/content/early/2013/12/13/0149206313515524

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Academy of Management Review, 14(1) (1989): 20–39.

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Human Resource Development Review, 12(1), Integrative Literature Review (2014): 11–35.

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50. 'Exploring the Dimensions of Organizational Performance: A Construct Validity Study', *P. Maik Hamann, Frank Schiemann, Lucia Bellora and Thomas W. Guenther*
Organizational Research Methods, 16(1), Feature Topic: Construct Measurement in Strategic Management (2013): 67–87.

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52. 'Organizational Citizenship Behavior: Its Nature and Antecedents', *C. Ann Smith, Dennis W. Organ and Janet P. Near*
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Organization Studies, 35(11), Special Issue: At a Critical Age: Organizing Age and Ageing; Guest editors: Susan Ainsworth, Leanne Cutcher, Cynthia Hardy and Robyn Thomas (2014): 1569–1584.

56. 'Time to Work: A Comparative Analysis of Preferences for Working Hours', *Haya Stier and Noah Lewin-Epstein*
Work and Occupations: An International Sociological Journal, 30(3) (2003): 302–326.

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Group & Organization Management, 39(5) (2014): 475–503.

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Asia Pacific Journal of Human Resources, 47(1) (2009): 41–58.

59. 'Unemployment Impairs Mental Health: Meta-Analyses', *Karsten I. Paul and Klaus Moser*
Journal of Vocational Behavior, 74(3) (2009): 264–282.

60. 'What Was, What Is, and What May Be in OP/OB', *Lyman W. Porter and Benjamin Schneider*
Annual Review of Organizational Psychology and Organizational Behavior, 1(1) (2014): 1–21.

61. 'West Meets East? Identifying the Gap in Current Cross-Cultural Training Research', *Kyoung-Ah Nam, Yonjoo Cho and Mimi Lee*
Human Resource Development Review, 13(1), Integrative Literature Review (2014): 36–56.

62. 'East Meets West: Effects of Justice on Employees' Commitment within the Context of International Joint Ventures in China', *Yui-Tim Wong*
Asia-Pacific Business Review (now renamed as *Asia-Pacific Journal of Management Research and Innovation*), VII (1) (2011): 5–19.

63. 'Psychological Capital: A Test of Measurement Invariance Across 12 National Cultures', *Tara Wernsing*
Journal of Leadership & Organizational Studies, 21(2) (2014): 179–190.

64. 'The Psychology of Entrepreneurship', *Michael Frese and Michael M. Gielnik*
Annual Review of Organizational Psychology and Organizational Behavior, 1 (2014): 413–438.

65. 'The Relationship of Entrepreneurial Traits, Skill, and Motivation to Subsequent Venture Growth', *J. Robert Baum and Edwin A. Locke*
Journal of Applied Psychology, 89(4) (2004): 587–598.

66. 'Virtual Teams: What Do We Know and Where Do We Go from Here?', *Luis L. Martins, Lucy L. Gilson and M. Travis Maynard*
Journal of Management, 30(6) (2004): 805–835.

67. 'Psychoinformatics: New Horizons at the Interface of the Psychological and Computing Sciences', *Tal Yarkoni*
Current Directions in Psychological Science, 21(6) (2012): 391–397.

68. 'Transforming Our Models of Learning and Development: Web-Based Instruction as Enabler of Third-Generation Instruction', *Kurt Kraiger*
Industrial and Organizational Psychology: Perspectives on Science and Practice, 1(4) (2008): 454–467.

69. 'Key Questions Regarding Work Engagement', *Arnold B. Bakker, Simon L. Albrecht and Michael P. Leiter*
European Journal of Work and Organizational Psychology, 20(1) (2011): 4–28.

70. 'The Impact of Civility Interventions on Employee Social Behavior, Distress, and Attitudes', *Michael P. Leiter, Heather K. Spence Laschinger, Arla Day and Debra Gilin Oore*
Journal of Applied Psychology, 96(6) (2011): 1258–1274.

71. 'Psychosocial Safety Climate as a Precursor to Conducive Work Environments, Psychological Health Problems, and Employee Engagement', *Maureen F. Dollard and Arnold B. Bakker*
Journal of Occupational and Organizational Psychology, 83(3) (2010): 579–599.

72. 'Organizational Climate and Culture', *Benjamin Schneider, Mark G. Ehrhart and William H. Macey*
Annual Review of Psychology, 64 (2013): 361–388.

Introduction: Research Methodology in I/O Psychology

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Changes are constantly occurring in industrial-organisational (I/O) psychology in response to the emergence of new theories and adoption of new research methodology (see Porter & Schneider, 2014). For example, the issue of bias in selection testing (Volume II) has had a dramatic impact on the organisational psychology (OP) field and has stimulated research into new constructs, such as organisational behaviour (OB), and pre-employment integrity tests (Ones et al., 2003). In addition, problems that employees face transferring newly acquired skills to the workplace have also been the subject of considerable research efforts (Baldwin & Ford, 1988). In recent decades, there have been major advances in I/O research methodology and multivariate statistical procedures, most notably, meta-analysis. Likewise, as Aamodt (2013) point out, there have been advances in technology with the advent of the *World Wide Web* (Internet) enabling online screening and recruitment of job applicants, use of social media (Twitter, Facebook, LinkedIn), e-learning and distance education.

Articles in this volume include those that deal with the rise and decline of various methodological approaches, articles that question established research practices and promote improved practices, as well as articles that propose new research strategies and techniques. The review by Aguinis et al. (2011) concludes that changes in I/O research methodology occur only slowly (cf. Scandura & Williams, 2000). Aquinis et al. observe that subjective self-report and survey methods are still the mainstay of data collection and analysis, while also noting an increasing emphasis on longitudinal studies, use of Web-based survey data, and multilevel modelling (MLM) (cf. Rowe, 2003). Articles selected highlight common but problematic methodological issues in organisational research and practice.

Common Method Bias

It is commonly believed that associations between variables measured using the same method will be inflated due to common method variance (CMV; Podsakoff et al., 2003). Campbell and Fiske (1959) identified CMV as a problem in psychological measurement and proposed a technique for separating trait from method variance. As is still the case today, the major source of CMV results from the use of self-report measures. Adding to this problem is the consistency motif, when respondents make judgements consistent with their own particular theories, making them "prey to illusory correlations" (Podsakoff & Organ, 1986). Socially desirable responding (Helmes et al., 2015) also may result in distorted responses, so that the use of introspective self-reports or reports of others remains problematic. As Boyle et al. (2008) stated, use of opinionnaires is subject to "item transparency and resultant motivational and response distortion, ranging all the way from deliberate dissimulation, to either conscious or unconscious faking (good or bad), to lack of adequate self-insight, and/or biased perceptions of others." In an attempt to counteract the impact of biased responding, Podsakoff and Organ suggest some procedural and *post hoc* statistical corrections. In contrast, Spector (2006) suggests that the undue focus on CMV should be replaced with a focus on specific measurement biases and "plausible alternative explanations for observed phenomena, regardless of whether they are from self-reports or other methods." Clearly, the onus is on researchers to identify as many as possible of the sources of bias and to estimate and control their impact.

Spector and Brannick (2011) highlight the misuse of statistical control variables in I/O research. They report that control variables "not linked to the hypotheses and theories being tested" are included in many I/O studies in the "belief that statistical controls can yield more accurate estimates of relationships among variables of interest." Spector and Brannick view this as a methodological urban myth, and raise concerns about including control variables. They argue that the "purification principle" leads to erroneous inferences because of the inappropriate manner in which controls are often used. Building on the work of Becker (2005), the authors suggest a more focused, theory-based use of statistical control variables.

Research Synthesis Methods: Meta-Analysis

Historically, meta-analysis (Glass et al., 1981) has been the predominant approach to research synthesis within I/O psychology (Schmidt et al., 2009). "Meta-analysis is the methodology of choice to synthesize existing empirical evidence and draw science-based recommendations for practice in the organisational sciences ..." (Aguinis et al., 2011). Meta-analysis "has proven to be the most effective tool developed in the I/O field to conduct research synthesis." (DeGeest & Schmidt, 2011). Given its central role (Cooper, 2010), it is germane to examine the meta-analytic technique itself.

Fernandez and Boyle (1996) provide a detailed guide as to meta-analytic methodology and interpretation, and also discuss its relative merits and shortcomings (see Eysenck, 1984, 1992). Fernandez and Boyle describe meta-analysis as a "quantitative method of cumulating research findings that lends itself especially well to large volumes of literature bedevilled by conflicting findings.... What particularly distinguishes meta-analysis from traditional methods of research review is its focus on the effect size (ES)." The development of meta-analytic techniques to examine the generalizability of predictors of job performance demonstrates that validity coefficients "are not situation-specific and vary mainly because of artefacts like sampling error and range restriction." Fernandez and Boyle conclude that, "The massive quantitative aggregation ... by meta-analysis has ... enabled a broad, coherent picture to emerge [which] would have been unattainable with the single study and quite elusive in a narrative review of the literature."

Aguinis et al. (2011) discuss meta-analytic procedures, erroneous understandings, assertions, and underlying assumptions as "myths and urban legends" (MULs) relating to the selection of primary-level studies, advances in meta-analytic methodology on outcomes, and inferences about putative causal relationships. Although Aguinis et al. conclude that, "meta-analysis is the definitive means of summarizing a body of empirical research," they also point out that the quality of meta-analytic results depends entirely on the quality of the primary studies included (cf. Eysenck, 1984, 1992). The authors also comment on other aspects of meta-analysis, including, for example, the fact that publication bias is no longer assessed using the *failsafe N* procedure (cf. Sutton, 2009).

In a similar vein, DeGeest and Schmidt (2011) trace the development of validity generalisation and its extension to the psychometric meta-analytic techniques within I/O research (Schmidt et al., 2009). De Geest and Schmidt describe the state of I/O research before and after the advent of meta-analytic techniques. According to the authors, prior to the use of meta-analysis, situational specificity theory it was thought that "the predictive validity of personnel selection procedures was situation-specific." The authors also discuss the impact of meta-analysis on findings within the training and leadership fields. They conclude that, "the psychometric meta-analysis model ... revolutionized thinking in I/O psychology and integrated the concepts of sampling error, measurement error, and range restriction into a compact framework that could be used to develop cumulative knowledge in the field."

Exploratory and Confirmatory Factor Analysis

Costello and Osborne (2005) provide best practice guidelines in applying exploratory factor analytic (EFA) methodology. While in software packages such as SPSS and SAS, the outmoded principal components analysis (PCA) method use of the eigenvalues ≥ 1.0 criterion, plus varimax orthogonal rotation is the default option, nevertheless, this is a flawed methodology which fails to distinguish between common and unique variance, resulting in spuriously inflated component loadings, and crude solutions (cf. Boyle, 1993). With normally distributed data, the authors recommend use of the maximum-likelihood (ML) method, with factor number determined by the Scree test

(Cattell, 1978), plus direct oblimin oblique rotation. For non-normally distributed data, Costello and Osborne recommend principal axis factoring (PAF). The authors fail to acknowledge that reliance on the eigenvalues ≥1.0 rule may result in underextraction of factors when the number of variables is ≤20, and serious overextraction when there are more than about 35–40 variables (Cattell & Vogelmann, 1977; Hakstian et al., 1982). The authors state that the break in the Scree plot suggests the number of factors. However, Child (1990) has shown that the one additional factor should be extracted (covering the psychometric screen). Costello and Osborne correctly conclude that oblique rotation (direct oblimin or promax) produces more accurate factor solutions than orthogonal (most often varimax) rotation (cf. Cattell, 1978; Gorsuch, 1983). However, Costello and Osborne fail to acknowledge the importance of obtaining *simple structure* solutions (see Thurstone's simple structure criteria in Child, pp. 48–49) by systematically varying the SPSS delta (δ) or kappa (κ) shift parameters (Boyle & Stanley, 1986). There is no discussion of using the ±.10 hyperplane count as a quantitative index of simple structure. However, Costello and Osborne show empirically that almost two-thirds of EFA studies in the PsycINFO database are based on inadequate sample sizes (<10:1). Even with a ratio of 20:1, only 70% of studies locate the correct factor pattern.

Whereas EFA seeks to map out an unchartered domain, confirmatory factor analysis (CFA) is employed when there is pre-existing evidence or at least an *a priori* theoretical model as to the structural dimensionality (latent trait structure) of a particular domain. As an example, Boyle and Fabris (1992) administered Holland's *Self-Directed Search* (SDS; Holland, 1994) to a sample of 401 apprentice plumbers. While LISREL congeneric factor analyses supported each of the RIASEC themes (except the Realistic theme), an overall CFA revealed an unsatisfactory fit of the data to the 6-factor RIASEC model on which the SDS instrument is based, raising some concern about the construct validity of the RIASEC model and corresponding SDS instrument.

Multiple linear regression (MLR) analysis is also a commonly employed multivariate technique used to identify which predictor variables explain most of the variance in the dependent variable/s (Nimon & Oswald, 2013). Although MLR is a mainstay of I/O research, intercorrelations between predictor variables (multicollinearity) remain problematic. As the authors indicate, when the predictor variables are correlated, the magnitude of the standardized regression (Beta) coefficients is not reliable. In an attempt to minimize this problem, Nimon and Oswald discuss alternative indices, including, "validity coefficients, structure coefficients, product measures, relative weights, all-possible-subsets regression, dominance weights, and commonality coefficients." The authors also provide software options for computing these alternative indices, in the hope that researchers can "understand the predictive relationships and interrelationships among variables in regression models more closely and from different perspectives."

Structural Equation Modelling and Multilevel Analysis

Determining the sample size needed to undertake valid structural equation modelling (SEM) or CFA is often problematic. These procedures rely on rules-of-thumb in determining sample size requirements (cf. MacCallum et al., 1996). Wolf et al. (2013) employ Monte Carlo simulation techniques for various CFA and SEM models to develop rules about the sample sizes needed in different contexts. They report that the requisite sample size in a given SEM or CFA analysis depends on the magnitude of factor loadings, missing data, reliability of the measures, number of indicators per factor, complexity of the SEM or CFA model, as well as the magnitude of the intercorrelations between factors. The authors point to the inadequacy of such rules-of-thumb, given the significant variability in CFA and SEM sample size requirements.

In addition, MLM has emerged as a powerful data analytic technique (Rowe, 2003) and is now widely used in I/O psychology. Mathieu and Chen (2011) trace the historical development of MLM and describe a number of its limitations. Mathieu and Chen examine challenges associated with use of MLM in management research, pointing out that the current paradigm is plagued by substantial error variance associated with ambiguous measures, nesting assumption violations, integration of longitudinal approaches and nested-arrangements, modelling of existing and future multilevel models, and finally, multidisciplinary influences on multilevel management theory and investigations. The authors discuss each of these limitations in detail, hoping to bring about a paradigm shift in multilevel research within the management field.

Misuse of Cronbach Alpha Coefficient

The routine reporting of the Cronbach alpha coefficient as the primary evidence of a scale's unidimensionality and/or reliability is unwarranted (Zinbarg et al., 2005). The alpha coefficient cannot assess the consistency of responses over time, but rather reflects the combined influences of internal consistency, and item redundancy, respectively (Boyle, 1991). High levels of item redundancy (due to rephrasing of items) may well result in high alphas (0.8 or 0.9), whereby each item variant provides little/no additional information about the particular construct/factor being measured. Scales with high alpha coefficients may provide a narrow breadth of measurement. Broader scales would be desirable whereby each item measures additional variance associated with the particular construct/factor under consideration. Indeed, Cronbach himself subsequently argued that measurement error is a better metric for assessing reliability. He stated that, *"I no longer regard the alpha formula as the most appropriate way to examine most data. Over the years, my associates and I developed the complex generalizability (G) theory"* (Cronbach & Shavelson, 2004). As a general guide though, Kline (1986) recommended that alpha coefficients should lie between 0.3 and 0.7 (<0.3 suggesting insufficient internal consistency; >0.7 suggesting excessive item redundancy).

In discussing abuses and misuses of the Cronbach alpha coefficient, Schmitt (1996) also points out that the all too common practice of providing only the alpha coefficient as an index of scale reliability is insufficient and not to be recommended. Schmidt also bemoans that the magnitude of the alpha coefficient does not necessarily indicate the unidimensionality or homogeneity of a scale (since reliability is directly linked to test length – see Spearman-Brown prophecy formula). The author also points out that with multidimensional scales, corrections for attenuation based on the alpha coefficient tend to be excessive. Schmidt also points out that psychometric scales with low alpha levels may still be quite valid and useful.

Likewise, Sijtsma (2009) also highlights the misuse and limited usefulness of the Cronbach alpha coefficient, pointing out that it is neither a measure of "internal consistency" nor "unidimensionality" and that its magnitude often falls outside the range of possible reliability values. The author cautions that, "by continuing to use alpha as *the* estimate of reliability test constructors and test users do themselves injustice.... The result of this misinterpretation of alpha is that due to a high alpha value, trait validity ... often is taken for granted when, in fact, it has not been investigated at all."

Adding further "fuel to the fire", Cho and Kim (2015) also discuss common misconceptions surrounding the Cronbach alpha coefficient – that it measures reliability, that it estimates internal consistency, that scale reliability is increased by deleting items using "alpha if item deleted," and that its magnitude should be ≥0.7. Cho and Kim conclude that, "Alpha is a relatively inferior method despite its widespread use ..." They argue that articles accepted for publication in I/O journals should not rely solely on the inferior alpha coefficient. The authors recommend that SEM-based estimates of reliability should be reported, rather than alpha coefficients when either the assumptions of unidimensionality or tau-equivalency are not satisfied.

Temporal Consistency Reliability

Temporal consistency is typically examined by means of test–retest correlations – both for immediate test–retest (dependability) coefficients and longer-term test–retest (stability) coefficients over days, weeks, months, years, and so on (cf. Cattell, 1973). For both state and trait measures, dependability coefficients should be high (0.8 or 0.9), while longer-term stability coefficients should remain high for trait measures, but for situationally sensitive state measures, test–retest correlations should be lower (Boyle et al., 2008). Historically, test–retest correlations have been calculated on total scores, but as DeSimone (2015) points out, this practice overlooks important information related to the consistency of (1) individual items, (2) item interrelationships, and (3) individual responding. DeSimone suggests additional statistics for assessing temporal consistency of a scale (cf. Revelle & Condon, 2014; Thompson & Vacha-Haase, 2000). In addition, DeSimone points out that, "inclusion of random and inconsistent responders has the potential to occlude estimates of temporal consistency. G-theory provides tools to assess the amount of observed score variance attributable to persons and items." Inclusion of fully worked examples is helpful in understanding the principles underlying the new techniques and demonstrates the potential utility of each proposed new statistic to enhance the assessment of temporal consistency.

Summary

Evidently, changes in methodological approaches used in organisational research occur slowly. Despite the well-documented limitations, much of the I/O research continues to rely on introspective (subjective) self-report measures. Although common method bias has been discussed extensively in the literature, this still remains problematic. The inappropriate use of "control variables" in organisational research continues to invalidate the testing of hypotheses. Research synthesis methods, such as meta-analysis have revolutionized the field of I/O psychology, with thousands of meta-analytic studies having been published over recent decades, adding greatly to our knowledge. In addition, advances in other multivariate techniques including EFA and CFA, as well as SEM, and MLM have greatly enhanced the I/O psychology knowledge base. However, the commonplace reliance on the Cronbach alpha coefficient as an estimate of "internal consistency" and/or "reliability" of a scale has been shown by several authors to be misplaced, and a range of alternative and more appropriate statistics are discussed.

References

Aamodt, M. G. (2013). *Industrial/organizational psychology: An applied approach*. Belmont, CA: Wadsworth, Cengage Learning.

Baldwin, T. T. & Ford, J. K. (1988). Transfer of training: A review and directions for future research. *Personnel Psychology*, *41*, 63–105.

Becker, T. E. (2005). Potential problems in the statistical control of variables in organizational research: A qualitative analysis with recommendations. *Organizational Research Methods*, *8*, 274–289.

Boyle, G. J. (1993). Special Review: Evaluation of the exploratory factor analysis programs provided in SPSSX and SPSS/PC+. *Multivariate Experimental Clinical Research*, *10*, 129–135.

Boyle, G. J., & Fabris, S. (1992). LISREL analyses of the RIASEC model: Confirmatory and congeneric factor analyses of Holland's Self-Directed Search. *Personality and Individual Differences*, *13*, 1077–1084.

Boyle, G. J., Matthews, G., & Saklofske, D. (2008). (Eds.), *The SAGE handbook of personality theory and assessment: Vol. 1 – Personality theories and models*. Los Angeles: Sage.

Boyle, G. J., Saklofske, D. H., & Matthews, G. (2012). (Eds.), *Sage benchmarks in psychology: Psychological assessment, Vol. 4: Applied psychological assessment*. London: Sage.

Boyle, G. J., & Stanley, G. V. (1986). Application of factor analysis in psychological research: Improvement of simple structure by computer assisted graphic oblique transformation: A brief note. *Multivariate Experimental Clinical Research*, *8*, 175–182.

Cattell, R. B. (1978). *The scientific use of factor analysis in behavioral and life sciences*. New York: Plenum.

Campbell, J. P. (1982). Editorial: Some remarks from the outgoing editor. *Journal of Applied Psychology*, *67*, 691–700.

Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin*, *56*, 81–105.

Cattell, R. B. (1973). *Personality and mood by questionnaire*. San Francisco: Jossey-Bass.

Cattell, R. B., & Vogelmann, S. (1977). A comprehensive trial of the scree and K.G. criteria for determining the number of factors. *Multivariate Behavioral Research*, *12*, 289–325.

Child, D. (1990). *The essentials of factor analysis* (2nd ed.). London: Cassell.

Cooper, H. M. (2010). *Research synthesis and meta-analysis: A step-by-step approach* (4th ed.). Los Angeles, CA: Sage.

Cronbach, L. J., & Shavelson, R. J. (2004). My current thoughts on coefficient alpha and successor procedures. *Educational and Psychological Measurement*, *64*(3), 391–418. doi: 10.1177/0013164404266386

Eysenck, H. J. (1984). Meta-analysis: An abuse of research integration. *Journal of Special Education*, *18*, 41–59.

Eysenck, H. J. (1992). Meta-analysis, sense or common sense? *Pharmaceutical Medicine*, *6*, 113–119.

Fernandez, E., & Boyle, G. J. (1996). Meta-analytic procedure and interpretation of treatment outcome and test validity for the practitioner psychologist. In M. Smith & V. Sutherland (Eds.), *International review of professional issues in selection and assessment*, Vol. 2 (pp. 109–125). New York: Wiley.

Glass, G. V., McGaw, B., & Smith, M. L. (1981). *Meta-analysis in social research*. Beverly Hills, CA: Sage.

Gorsuch, R. L. (1983). *Factor analysis* (2nd ed.). Hillsdale, NJ: Erlbaum.

Hakstian, R. A., Rogers, W. T., & Cattell, R. B. (1982). The behavior of numbers-of-factors rules with simulated data. *Multivariate Behavioral Research*, *17*, 193–219.

Helmes, E., Holden, R. R., & Ziegler, M. (2015). Response bias: Malingering and impression management. In G. J. Boyle, D. H. Saklofske, & G. Matthews, G. (Eds.), *Measures of personality and social psychological constructs* (pp. 16–43). Amsterdam, The Netherlands: Academic. doi: http://dx.doi.org/10.1016/B978-0-12-386915-9.00001-2

Holland, J. L. (1994). *Self-Directed Search: Form R* (4th ed.). Odessa, FL: Psychological Assessment Resources.

Kline (1986). *A handbook of test construction: Introduction to psychometric design*. London: Methuen.

MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structural modeling. *Psychological Methods*, *1*, 130–149. doi.org/10.1037/1082-989X.1.2.130

Ones, D. S., Viswesvaran, C., & Schmidt, F. L. (2003). Personality and absenteeism: A meta-analysis of integrity tests. *European Journal of Personality*, *17*, S19–S38.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioural research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*, 879–903.

Porter, L. W., & Schneider, B. (2014). What was, what is, and what may be in OP/OB. *Annual Review of Organizational Psychology and Organizational Behavior*, *1*, 1–21.

Revelle, W., & Condon, D. M. (2014). Reliability. In P. Irwing, T. Booth, & D. Hughes (Eds.), *The Wiley-Blackwell handbook of psychometric testing.* West Sussex, UK: Blackwell.

Rowe, K. J. (2003). Estimating interdependent effects among multilevel composite variables in psychosocial research: An example of the application of multilevel structural equation modelling. In S. P. Reise & N. Duane (Eds.), *Multilevel modeling: Methodological advances, issues, and applications*. Mahwah, NJ: Erlbaum.

Scandura, T. A., & Williams, E. A. (2000). Research methodology in management: Current practices, trends, and implications for future research. *Academy of Management Journal*, *43*, 1248–1264.

Schmidt, F. L., Oh, I. S., & Hayes, T. L. (2009). Fixed vs. random effects models in meta-analysis: Model properties and comparison of differences in results. *British Journal of Mathematical and Statistical Psychology, 62*, 97–128.

Sutton, A. J. (2009). Publication bias. In H. Cooper, L. V. Hedges, & J. C. Valentine (Eds.), *The handbook of research synthesis and meta-analysis* (pp. 435–452). New York: Russell Sage.

Thompson, B., & Vacha-Haase, T. (2000). Psychometrics is datametrics: The test is not reliable. *Educational and Psychological Measurement*, *60*, 174–195.

Vancouver, J. B., Thompson, C. M., Tischner, E. C., & Putka, D. J. (2002). Two studies examining the negative effect of self-efficacy on performance. *Journal of Applied Psychology*, *87*, 506–516.

Zinbarg, R. E., Revelle, W., Yovel, I., & Li, W. (2005). Cronbach's alpha, Revelle's beta, McDonald's omega: Their relations with each and two alternative conceptualizations of reliability. *Psychometrika*, *70*, 123–133.