



Is Bart Simpson offering sage advice? A case-based general theory of managers' core self-evaluations and job satisfaction[☆]



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ABSTRACT

This study applies asymmetric rather than conventional symmetric analysis to advance theory in occupational psychology. The study applies systematic case-based analyses to model complex relations among conditions (i.e., configurations of high and low scores for variables) in terms of set memberships of managers. The study uses Boolean algebra to identify configurations (i.e., recipes) reflecting complex conditions sufficient for the occurrence of outcomes of interest (e.g., high versus low financial job stress, job strain, and job satisfaction). The study applies complexity theory tenets to offer a nuanced perspective concerning the occurrence of contrarian cases—for example, in identifying different cases (e.g., managers) with high membership scores in a variable (e.g., core self-evaluation) who have low job satisfaction scores and when different cases with low membership scores in the same variable have high job satisfaction. In a large-scale empirical study of managers ($n = 928$) in four (contextual) segments of the farm industry in New Zealand, this study tests the fit and predictive validities of set membership configurations for simple and complex antecedent conditions that indicate high/low core self-evaluations, job stress, and high/low job satisfaction. The findings support the conclusion that complexity theory in combination with configural analysis offers useful insights for explaining nuances in the causes and outcomes to high stress as well as low stress among farm managers. Some findings support and some are contrary to symmetric relationship findings (i.e., highly significant correlations that support main effect hypotheses). The study's findings include evidence supporting the opposite stance to Bart Simpson's (a fictional character in a TV cartoon series) advice that having a cow reflects high stress; dairy farming is an ingredient in farm managers' configurations that reduce stress.

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1. Introduction

The present study attempts to see both the forest and the trees—that is, describe, explain, and model alternative, configurational, asymmetric, case-based configurations of how individual and industry sub-categories, job stressors, core self-evaluation theory, and job strain identify high as well as low job satisfaction (JS). The study's use of asymmetric case-based modeling also includes separate models indicating either high or low JS. The study provides case-level model profiles that are high in accuracy consistently in predicting managers high (and separate models for managers low) in JS. Thus, the study focuses on case-based modeling using somewhat precise outcome testing (SPOT, Woodside, 2016) and avoids the fatal flaws in using null hypothesis statistical

testing (NHST) (Armstrong, 2012; Gigerenzer & Brighton, 2009; Hubbard, 2016; Trafimow, 2014; Trafimow & Marks, 2015) and the flaws in examining the relative sizes of betas in regression models (Armstrong, 2012; Hubbard, 2016). The study contributes to the literature by describing how complexity theory and configurational analysis applies in constructing asymmetric models in case-based research on JS. The study advances McClelland's (1998) algorithm asymmetric analysis, with predictive validation using additional samples, to solve the pervasive current mismatch between theory and analysis (Fiss, 2011) in human resource management (HRM) research.

This asymmetric research perspective rests on a foundation of complexity theory. Adopting asymmetric perspective goes beyond the dominant logic in the literature of symmetric, variable-based, theory construction/testing. The asymmetric approach to theory construction and data analysis recognizes and models cases supporting main effects hypothesis (e.g., generalized self-efficacy associates positively with JS) as well as cases exhibiting relationships contrarian to such symmetric hypotheses (e.g., high generalized self-efficacy contributes to low JS in some contexts). Complexity theory and asymmetric analysis go beyond the empirically support of small, medium, and large main effects

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of relationships of independent on dependent variables. For example, a complexity theory tenet suggests the need for modeling the configuration of causes that include contrarian associations in JS research, such as for cases (employees or managers) where high job stress associates with high job performance; such cases occur in possibly all studies with moderate-to-large sample sizes but are typically ignored in studies focusing on the general finding of a modest effect-size, negative, main effect for job stress and JS. Rather than adopting a symmetric stance, complexity theory supports the perspective that a configurational asymmetric perspective is necessary for examining complex antecedent conditions to achieve deep understanding and for reporting complex wholes of causes—because different cases occur whereby job stressors and job satisfaction relationships support and run counter to intuitive associations as well as cases where the same job stressors do not associate with job satisfaction.

Heretofore, nearly all reports (e.g., Hiller & Hambrick, 2005; Judge & Bono, 2001; Nguyen & Borteyrou, 2016) of research on decision-making and JS rely on symmetric variable-based theory and empirical tests of variable relationships (exceptions include Alegre et al., 2014; Gigerenzer & Brighton, 2009; Hsiao, Jaw, Huan, & Woodside, 2015; McClelland, 1998). A few studies recognize that symmetric theory and tests (e.g., correlations, multiple regression analyses (MRA), and structural equation models, SEMs) do not provide high levels of accuracy in predicting individual outcomes of cases (e.g., predicting implemented firm strategies or highly competent versus typical managers, see Fiss, 2007, 2011; Fiss, Marx, & Cambré, 2013; McClelland, 1998; Ordanini, Parasuraman, & Rubera, 2014). McClelland's (1998) solution for identifying highly competent managers is to create complex asymmetric algorithms (e.g., screening by identifying highly competent executives to be managers in the top quintiles across 5 of 7 antecedent conditions). Unlike symmetric models attempting to predict low and high scores, asymmetric models are one-directional in their explanations and predictions; these models predict only the high scoring cases—positive or negative outcomes separately. Consequently, theory and testing to understand high versus low JS benefits from identifying separate sets of antecedent conditions relevant for each outcome. The asymmetric approach in HRM research constructs and tests theory from a complexity theory perspective. Complexity theory holds that a simple condition (say X) relates both positively and negatively to an outcome condition (Y) in the same data set—which relationship depends on the presence of specific combinations of additional simple conditions appearing with X (e.g., conditions, T, R, and S versus T, L, and not S). Complexity theory also proposes the tenet of causal asymmetry, that is, the causal configuration indicating cases with a high outcome (Y) are not the mirror opposite of the causal conditions indicating cases with a low outcome (Y). Thus, for high accuracy and understanding, the study of low JS requires constructing separate models versus the models that accurately predict high JS (Hsiao et al., 2015). The present study proposes and tests this tenet and other core tenets of complexity theory for describing, explaining, and predicting JS. As such, the present study suggests adopting a radical stance for understanding dispositional and contextual sources of JS.

McClelland (1998) emphasizes that examining and reporting antecedents for high versus typical employee performance in terms of symmetrical tests (e.g., ANOVA, correlation, multiple regression analysis) understates and misrepresents the significance of the focal relationship (i.e., managers who are highly competent), while configural statements based on tipping-points provide highly useful “competency algorithms.” For a classification of “outstanding” versus “typical” performer, the competency algorithm screen that McClelland (1998, p. 334) describes requires a case (i.e. individual executive) to achieve “for at least 1 of the 3 individual-initiative competencies, 1 of the organizational competencies, and 6 of the 12 valid competencies overall.” Ragin (2008) advances theory and provides useful software (fsQCA.com) for model-building and empirical-testing alternative algorithm screens that identify cases with high (or low) focal outcomes with high

consistency. An algorithm is a conjunctive statement that requires the presence of two-or-more conditions in a given case for a favorable (unfavorable) outcome to occur. For example, the following algorithm predicts a high performer and is a complex antecedent condition (a recipe) that combines four simple antecedent conditions: a frontline employee who is happy-at-work (H), works well with other employees (O), never causes peer conflicts (~C), and always arrives to work on-time (T) is a high performer (P):

$$H \cdot O \cdot \sim C \cdot T \Rightarrow P \quad (1)$$

where the tilde (“~”) represents negation; the mid-level dot (“·”) represents the logical “AND” condition meaning that a case must have a high score in each simple condition in the complex statement. Model 1 states that cases high conjunctively in all four simple conditions in the configuration have high scores in work performance. Unlike symmetric tests, researchers use Boolean algebra rather than matrix algebra to test such models; thus, since the model states that high scores in all four conditions indicates a high outcome condition (P), a case (e.g., employee) low in any one of the four simple conditions causes the complex condition to have the same low score. The model applies a conjunctive rule and not a compensatory rule. This configurational statement does not tell us that exhibiting this recipe is the only recipe that results in the identification of a high performer; the statement states only that an employee high in all four ingredients is a high performer. The statement indicates sufficiency but not necessity. “Equifinality” (i.e., different configurations of causes indicate the same outcome) is another core tenet of complexity theory.

Thus, the focus of the present study differs radically from most prior studies in describing, explaining, and predicting JS. The focus here is on “statistical sameness” (Hubbard, 2016) rather than on statistical difference from zero; that is, do high scores in a model identify high scores in model's outcome condition consistently? Rather than examining effect sizes of relationships between each X (an independent variable) affecting the level of Y (JS) via a symmetric test, the present study proposes simple and complex antecedent conditional statements (i.e., algorithms) which indicate cases with high scores consistently in the outcome of interest (i.e., high JS) via asymmetric tests. Thus, the focus here is on “somewhat” precise outcome testing (SPOT) that provides moderately complex statements useful for consistently (almost always) identifying cases exhibiting specific outcomes (cf. Hubbard's, 2016 advocacy of “precise outcome models” in behavioral research). While symmetric variable low-high relationships are testable by symmetric matrix-algebra based statistical tools (e.g., MRA), SPOT consists of algorithmic screening statements testable by asymmetric Boolean-based statistical tools (e.g., fuzzy-set, qualitative comparative analysis) for achieving consistent accuracy in predicting an outcome of interest. Woodside (2016) observes that several independent sources of evidence (Anscombe, 1973; Armstrong, 2012; Soyer & Hogarth, 2012) support the conclusion that symmetric statistical test outputs are misleading even among the world's leading experts in econometrics (Soyer & Hogarth, 2012). Such indexes as t, p, F, r, and r^2 fail to answer the most pressing theoretical and practical question: does a high (or low) score by the model predict accurately and consistently the outcomes in additional samples? The reliance on reporting correlation sizes with respect to zero and relative sizes of correlations among independent variables can be highly misleading. “Anscombe's quartet” of different observable data displays for identical symmetric test findings is highly instructive in reaching this conclusion. Anscombe (1973) created four XY plots of four different data sets having the identical averages, standard deviations, and correlations to illustrate the great usefulness of showing relationships visually—such visual displays should be done before and/or after symmetric as well as asymmetrical testing. The study that follows does present XY plots of the models' performances in being able to consistently predict the outcome scores of cases.

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