



# Personality correlates of method effects due to negatively worded items on the Rosenberg Self-Esteem scale

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## ABSTRACT

Covariance modeling was used to investigate correlates of method effects associated with negatively worded items on the Rosenberg Self-Esteem scale (Rosenberg, M., 1989) differentiated by respondent's sex. Six personality measures thought to be related to the presence of this method effect (e.g., social desirability, evaluations by others, and self regulation of behavior) were incorporated into a path model. Analyses suggested that method effect associated with negatively worded items may be more prominent for subjects possessing selected personality traits than for others. Additionally, relationships varied by sex. Females reported that negative feedback from others spurred close reflection of behavior, while males reported greater tendencies to inhibit behavior before the negative outcome occurred.

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## 1. Introduction

Concerns with preventing response biases in survey instruments have largely motivated the strategy of including both positively and negatively worded items on a survey (e.g., DeVellis, 1991). This practice is intended to reduce acquiescence or agreement bias (DeVellis, 1991), but may itself introduce systematic biases into the assessment of a construct (i.e., method effects; Horan, DiStefano, & Motl, 2003; Marsh, 1996; Motl & DiStefano, 2002; Tomás & Oliver, 1999). If responses systematically differ based on the direction of the item wording, then the resulting data are likely confounded by a method effect caused by the mechanism used to collect the information. Such a method effect could impact a researcher's view of the underlying structure of an instrument (Rauch, Schweizer, & Moosbrugger, 2007) and the sum and interpretation of scores from a scale. For example, Weems and colleagues reported that negatively worded items (after reverse coding) had lower mean scores than positively worded items in a study of anxiety towards research among graduate students (Weems, Onwuegbuzie, Schreiber, & Eggers, 2003). Accordingly, method effects associated with item wording could impact decisions that rely upon the accuracy of the data.

Researchers have used a strategy of combining a multitrait-multimethod (MTMM) conceptual framework (Campbell & Fiske,

1959) with confirmatory factor analysis (CFA; Jöreskog, 1974) for the separation and empirical estimation of substantive and method components among items on a scale (Marsh, 1989; Marsh & Grayson, 1995). Using that strategy, one approach for examining method effects associated with item wording involves a correlated traits-correlated methods (CTCM) model. This model treats method effects as a latent variable that is incorporated into the analysis as a distinct factor in conjunction with the content factor(s). The resulting relationships between items and the method factor (i.e., factor loadings) not only illustrate the strength of the relationship to the method factor, but, more importantly, allow for the method variance to be removed from the substantive construct of interest. This view recognizes that there are distinct patterns of responses that, while unrelated to the construct(s) under investigation, are of interest to study. We emphasize that considering method effects as a unique factor in the design allows researchers the opportunity to evaluate the empirical properties and meaning of the negative wording factor.

The Rosenberg Self-Esteem scale (RSES) has been widely used in examinations of method effects on surveys (Tomás & Oliver, 1999; Wang, Siegal, Falck, & Carlson, 2001). Indeed, previous studies have used the RSES and the CTCM framework in examinations of method effects associated with item phrasing, and reported the existence of a method effect associated primarily with negatively worded items. This method effect has been observed across diverse populations of individuals (Tomás & Oliver 1999; Wang et al., 2001), correlated with method effects on other scales measuring

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different content (e.g., Horan et al., 2003), and consistent and stable across time (Motl & DiStefano, 2002), supporting the notion that method effects associated with negatively worded items might represent a response style (Bentler, Jackson, & Messick, 1971; Billiet & McClendon, 2000). We define this response style as a personality trait that involves the predisposition toward interpreting and endorsing items based on a certain tone or valence, often occurring with negatively worded items.

Further evidence for such an interpretation is, in part, derived from correlations between method effects and personality traits. Indeed, previous research has provided some evidence consistent with our substantive interpretation of method effects as a response style. For example, De Jonge and Slaets (2005) identified a relationship between two personality traits, neuroticism and extraversion, and the method effect associated with negative item phrasing. Neurotic individuals were less likely to exhibit a method effect associated with negative item phrasing, whereas extraversion was positively related to the presence of the method effect associated with negative item wording (De Jonge & Slaets, 2005). Jackson and Francis (1999) further identified a negative correlation between neuroticism and another method effect – social desirable responding. Quilty, Oakman, and Risko (2006) investigated the method effect associated with negative phrasing as it relates to the “big five” personality traits (e.g., neuroticism, extraversion, agreeableness, conscientiousness, and openness to experience) using the CTCM model with a CFA analytic strategy. There was a relationship between emotional stability and endorsement of negatively worded items. College students with higher levels of self-esteem and conscientiousness were less likely to endorse negatively worded items, whereas students with high avoidance motivation scores on the Behavioral Inhibitions System (BIS, Carver & White, 1994) were more likely to endorse negatively worded items (Quilty et al., 2006).

Although there have been a few studies examining personality traits as correlates of method effects associated with negatively phrased items, these individual investigations have examined a narrow range of personality characteristics and have not considered the possibility that the personality correlates could vary as a function of sex. The present study examined the relationship between method effects associated with the negatively worded items on the RSES and an array of personality traits aligned with social desirability, inhibition/exhibition, and self-consciousness as a function of sex using a CTCM strategy and a path model (Wright, 1960); our interest was not aligned with examining correlates of RSES. The set of analyses can help to determine if responses to negatively worded items are related to a more diverse array of personality traits and if such relationships differ by respondent sex.

## 2. Methods

### 2.1. Sample

Subjects were recruited from psychology courses and kinesiology courses at two southeastern universities in the United States. Students who participated in data collection but did not report their sex were not included in the analyses based on our interest in examining the role of sex in the relationship between method effects and personality characteristics. The final sample included 678 students, 316 males and 362 females. The average age of the sample was 22.4 years ( $SD \pm 7.2$  years) with a range from 16 to 75 years. The majority of the students (87%) were under 25 years of age.

### 2.2. Instrumentation

We collected data on a single occasion using seven instruments. The RSES (Rosenberg, 1989) was used because it has shown the pres-

ence of method effects associated with negatively worded items in previous studies (Horan et al., 2003; Motl & DiStefano, 2002; Tomás & Oliver, 1999). The scale consists of 10 items, five positively worded and five negatively worded. All items were rated on a four-point Likert scale with verbal anchors of: Strongly Disagree (1), Disagree (2), Agree (3), and Strongly Agree (4). RSES item scores were coded such that higher scores illustrate higher self-esteem.

Six additional scales were administered to evaluate possible personality traits related to the presence of method effects: the Marlowe–Crowne Social Desirability scale, the Lie scale from the Eysenck Personality scale, Behavioral Inhibition System /Behavioral Activation System, Fear of Negative Evaluation, Self-Monitoring, and Self-Consciousness. These scales represent personality traits that might be related to the method effect associated with negative item wording.

The Marlowe–Crowne Social Desirability scale (Crowne & Marlow, 1960) is often used to assess the extent to which one presents his/herself favorably by providing socially desirable, rather than honest, responses. The short form of the Marlowe–Crowne scale was used in the current study (Greenwald & Satow, 1970). This version consists of 13 items rated using a “Yes” or “No” scale; eight of the 13 items are reverse coded. The Lie scale from the Eysenck Personality Questionnaire (EPS-Lie) allows researchers to detect when respondents are “faking good” in their responses. The EPS-Lie scale consists of 21 items rated on a “Yes” or “No” scale, with six items reversed coded.

The Behavioral Inhibition System (BIS) and the Behavioral Activation System (BAS) (BIS/BAS; Carver & White, 1994) was included to measure two dimensions of personality: anxiety and impulsivity. Each of these two motivational systems, BIS and BAS, are thought to measure a broad affective quality. The BAS measures positive affect and the BIS measures negative affect. BIS measures anxiety by assessing an individual's sensitivity to inhibit behaviors that may lead to negative outcomes. This scale is measured by seven items, of which two are reverse coded. BAS measures one's willingness to engage in goal directed efforts in response to cues of impending rewards. BAS is further divided into three scales: (a) Reward Responsiveness scale (BAS-RR; five items) measures the tendency to respond with heightened energy when rewards are anticipated, (b) Drive (BAS-D, four items) measures the ability to pursue desired goals, (c) Fun Seeking (BAS-FS, four items) measures tendency towards risk taking or impulsive behaviors. All items on the BAS are positively worded; no recoding is necessary. Higher scores on the BIS scale illustrate greater sensitivity to punishment, while higher scores on the BAS show a higher amount of positive affect toward a pending reward. All items on the BIS/BAS scale are rated using a four-point Likert scale with verbal anchors of: Strongly Disagree (1), Disagree (2), Agree (3), and Strongly Agree (4).

The short form of the Fear of Negative Evaluation scale (FNE; Leary, 1983) was used to measure the degree to which people experience uneasiness at the prospect of being evaluated negatively. Higher scores on the FNE illustrate a greater apprehension towards a negative evaluation. The scale consists of 12 items, four of which are negatively worded. Items are rated along a five-point Likert scale with anchors: Not at all characteristic of me (1), Slightly characteristic of me (2), Moderately characteristic of me (3), Very characteristic of me (4), and Extremely characteristic of me (5).

The Self-Consciousness (SC; Fenigstein, Scheier, & Buss, 1975) scale was included to measure one's tendency to direct their attention inward, reflecting on their actions. Higher scores illustrate a greater tendency to scrutinize personal behavior according to feedback from self and others. The SC scale is divided into three subscales: (a) Private Self-Consciousness (SC-Pri; 10 items – two negatively worded) measures the propensity to pay attention to inner thoughts and feelings; (b) Public Self-Consciousness (SC-Pub; seven items) measures awareness of the self as a social object hav-

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