Are employee surveys biased? Impression management as a response bias in workplace safety constructs

Keiser & Payne (2019)

Self-Reports of Safety

- Safety research relies extensively on self-reports
  - 55/90 studies measured predictors and criteria via self-report (Christian et al., 2009)

- Impression management (IM) as a method bias
  - Motivation to impression manage
  - Salient social consequences and costs (Edwards, 1957; Baumeister, 1982; Leary & Kowalski, 1990; Podsakoff et al., 2012)

- Related issues:
  1. Substance and style of impression management scales (Connelly & Chang, 2016)
  2. Use of anonymous safety surveys to eliminate/limit bias

Primary Study Questions

- Can we trust employees to provide honest, unbiased responses to self-report measures of safety?

- How much are self-report measures of safety-related constructs influenced by impression management?

- Study 1 & 2 & 3: Estimate biasing effect of IM

- Study 2: Substance vs. style of IM

- Study 3: Anonymous vs. identified subsamples

Method: Study 1, 2, & 3

- Study 1
  - 757 university lab personnel surveyed
  - Impression management scale (Paulhus, 1991)
  - Confirmatory factor analyses (Williams & McGonagle, 2016)

- Study 2
  - 123 university lab personnel surveyed
  - Additional measures:
    - Larger impression management scale (Blasberg et al., 2014)
    - Personality inventory (Gosling et al., 2003)
  - Partial correlations

- Study 3
  - 107 oil and gas personnel in Qatar
  - Identified (n = 96) vs. anonymous (n = 11)
  - Unlikely virtues (Weekley, 2006)
  - Partial correlations

Study 1 – Results

- Final retained model: Unconstrained (i.e., freely estimated) method factor loadings
  - Impression management
  - Unmeasured method factor

- Unconstrained vs. baseline models significantly different

- **Variance reduction rate (VRR)**: % of variance in the relationships among safety constructs attributable to method factors

- Impression management – Largest reductions for factor correlations with safety climate (average VRR = 28%)

- Unmeasured method factor – Largest reductions for factor correlations with safety compliance (IM + unmeasured factor [average VRR = 34%])

Study 2 – Results

- Partial correlation comparisons
  - Zero order correlations vs. partial correlations (controlling for IM and personality)
  - Estimate effects based on VRRs

- Impression management – Largest reductions for correlations with safety outcomes (average VRR = 74%)

- Personality – Accounted for ~12% of the variance in relationships between IM and safety constructs
  - All relationships between IM and safety constructs remained significant when controlling for personality

Study 3 – Results

- Unlikely virtues scale accounted for less variance in safety relationships than in Study 1 & 2 (average VRR = 11%)

- Largest reductions for correlations with safety knowledge (average VRR = 24%)

- Unlikely virtues accounted for no variance in relationships among safety outcomes

Study 3 – Results

		Unlikely Virtues
	n	M (SD)
Anonymous subsample	11	3.28 (1.37)
Identified subsample	96	3.55 (0.83)

		VRR
	n	M (SD)
Full sample	107	11%[*] (15%)
Identified subsample	96	2%[*] (0.07%)

Conclusions

- Impression management as a method bias?
  - Results generally support a biasing effect of IM
  - Study 1 – Largest biasing effect for safety climate
  - Study 2 – Largest biasing effect for safety outcomes
  - Study 3 – Comparatively smaller biasing effect (safety salience?)

- Study 2 – IM related to safety measures even after controlling for personality trait variance

- Study 3 – Inconsistent evidence of differences between anonymous and identified subsamples

THANK YOU!

Contact information:
Stephanie Payne – scp@tamu.edu
Nate Keiser – keiser.nate@gmail.com