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Orginal Article

Design and Validation of Situational Judgment Test of Critical Social Thinking of Managers of Iran alloy Steel Company

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Abstract

The purpose of this study is to design and validate the situational judgment test of critical social thinking of managers in the Iranian Alloy Steel Company. This study is descriptive-survey and applied in terms of purpose. The research sample includes 196 people (for exploratory factor analysis and reliability) and 210 separate people (for confirmatory factor analysis and convergent validity) from the management level employees of the Iranian Alloy Steel Company, who were selected by stratified sampling method. In order to formulate the situations and answer options of the test, the opinions of subject experts were used, and the validity of the test was examined using correlation methods, goodness of fit study, factor analysis, and reliability analysis. The results showed that three factors with eigenvalues greater than one explained 57% of the total variance of the scores, and Cronbach's alpha coefficients for each of the components and the total scale were above 0.7. Also, the results of confirmatory factor analysis were obtained in all cases above 0.5 and the convergent validity of the test with critical social thinking scores in the assessment center showed a moderate correlation. The evidence of this study showed that using the Grossman et al. conceptual model and also using the situational judgment method as a valid tool for measuring employees' communication competencies can effectively measure employees' critical social thinking in complex organizational social situations and potentially be a suitable starting point for designing educational and human capital development interventions in this field.

Keywords: Situational judgment test, Critical social thinking, Factor analysis, Assessment center

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Extended abstract

Introduction

In today's dynamic and socially complex organizational environments, the ability of employees (particularly managers) to navigate interpersonal interactions effectively has become a crucial determinant of occupational success. Although interpersonal knowledge, skills, and abilities (KSAOs) are widely recognized as essential for job performance, organizations continue to face significant challenges in accurately assessing these competencies within real-world contexts. To address this gap, the present study develops and validates a Situational Judgment Test (SJT) designed to evaluate Critical Social Thinking (CST) among managers at the Iran Alloy Steel Company. Drawing on the conceptual framework of Grossman et al. (2015), CST is conceptualized as a higher-order social–cognitive competency that encompasses processes such as scanning, appraising, interpreting, and interacting within complex interpersonal situations. Building on previous theoretical models, this research responds to the practical need for more ecologically valid assessment tools in HR contexts. SJTs, which evaluate behavioral tendencies using context-rich scenarios, are particularly suitable for assessing CST, as the construct manifests through subtle forms of social judgment and behavior.

Method

This study employed a descriptive–correlational psychometric design. The statistical population consisted of all managerial-level employees of the Iran Alloy Steel Company in early 2022. Using stratified random sampling, two independent samples were selected: 196 participants for exploratory factor analysis (EFA) and reliability assessment and 210 participants for confirmatory factor analysis (CFA) and convergent validity. The development of scenarios and response options was informed by subject-matter experts and refined through both qualitative and quantitative validation procedures. These included obtaining content validity via the Content Validity Index (CVI), assessing internal consistency with Cronbach's alpha, and conducting correlation analyses to examine construct relationships.

Results

Exploratory factor analysis using principal component extraction and varimax rotation revealed a clear three-factor structure: (1) Scanning: the ability to identify and attend to socially relevant cues, (2) Appraising: the capacity to evaluate these cues in light of organizational norms and expectations, (3) Interpreting: the ability to extract meaning from social information and anticipate potential consequences. All 18 items in the

finalized SJT demonstrated strong factor loadings, collectively accounting for 57% of the total variance. Confirmatory factor analysis further supported this three-factor model, yielding acceptable fit indices (e.g., RMSEA = 0.08, GFI = 0.85), establishing structural validity. Internal consistency was high across the scale: Overall scale: $\alpha = 0.854$, Scanning: $\alpha = 0.880$, Appraising: $\alpha = 0.833$, Interpreting: $\alpha = 0.831$. Convergent validity was demonstrated through a significant correlation ($r = 0.223$, $p < 0.01$) between CST-SJT scores and CST ratings obtained from behaviorally anchored rating scales (BARS) used in the organization's Assessment Center. Although moderate, this level of correlation aligns with expectations, given that SJTs measure behavioral tendencies in hypothetical yet realistic scenarios, whereas Assessment Centers assess actual behaviors in live simulations.

Discussion

The results indicate that the developed SJT possesses sound psychometric properties and can effectively assess managers' competencies in navigating socially complex workplace situations. This positions the CST-SJT as a valuable tool not only for employee selection and promotion, but also for developmental initiatives aimed at enhancing interpersonal effectiveness. The study contributes to the expanding literature on social–cognitive competencies by introducing a context-specific and theoretically grounded assessment aligned with organizational needs. It further demonstrates the applicability of Grossman et al.'s (2015) CST framework for instrument development in industrial environments. While previous SJTs have primarily targeted constructs such as teamwork, leadership, or emotional intelligence, this study is among the first to explicitly operationalize and assess *critical social thinking* as a distinct competency. However, the study is limited by its focus on a single organization within the steel industry, which may restrict generalizability. Future research should evaluate the CST-SJT across diverse industries and examine its predictive validity for long-term job performance and organizational outcomes. Additional studies could also explore associations between CST and related constructs such as emotional intelligence, conflict management styles, and cognitive flexibility. In conclusion, this study highlights the potential of using contextualized SJTs to assess and develop socially grounded managerial competencies. The validated CST-SJT provides HR professionals with a practical, cost-effective, and behaviorally informative tool for enhancing selection processes and leadership development programs in complex organizational environments.

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analysis and all authors discussed the results, reviewed and approved the final version of the manuscript.

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