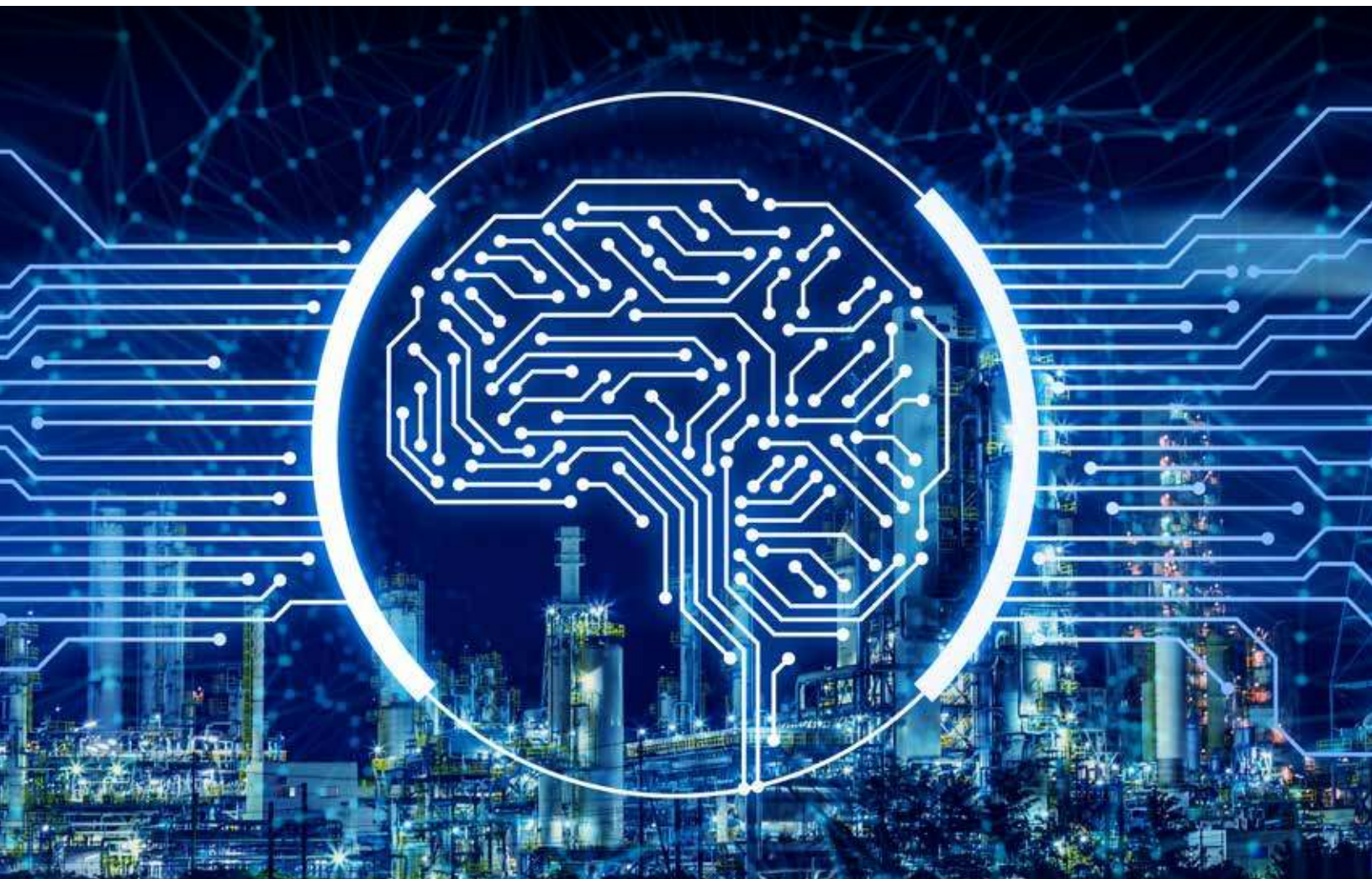PREVIEW

PERSONALITY & APTITUDE ASSESSMENT OF TOP-PERFORMING EC PROJECT MANAGERS

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Introduction

The objective of this study was to identify personality and aptitude traits, collectively known as "Human Dimensions," of Top-Performing NECA Project Managers (PMs). The purpose of this study was solely at the pilot level to determine—on an exploratory scale—the distinguishing traits of Top-Performing PMs in comparison to average-performing project managers. If substantial differences are found at the pilot level, it would suggest that future studies can be pursued to confirm findings at more widespread and comprehensive levels.

Beyond the pilot scale, **potential benefits to NECA of identifying the distinguishing Human Dimensions of Top-Performing PMs include:**

- *Hiring New Personnel:* increased probability of finding employees who are the right "fit" and have potential to develop into Top-Performing PMs.

- *Internal Promotion Decisions:* assess employee likelihood of success and measure their "match" when transitioning between roles, job functions, and career progressions.

- *Internal Talent Development:* grow employees to best achieve their maximum potential and arm employees with the knowledge of Top-Performing traits to assist in their development.

- *Talent Retention:* early recognition of employees with the highest potential to become Top-Performing PMs and implement retention strategies to keep them at the company.

In an exploratory effort to find the distinctive traits of Top-Performing PMs, this pilot study used the following Human Dimension assessments:

- *HEXACO Personality Inventory:* a recently developed six-dimensional model of human personality.

- *Emotional Intelligence Diagnostic:* an assessment of individual capability to recognize and manage their own emotions and those of others.

- *DISC Behavioral Assessment:* a categorical measure of four behavior types and subscales related to communication styles as well as people- vs. task-orientation.

Data Collection

These three assessments were piloted among NECA Project Managers nationally via distribution through local NECA Chapter Managers. A trial dataset was collected of 75 NECA PMs who both (1) completed the assessment, and (2) had their direct supervisors submit additional feedback about each project manager's overall performance level. **Figure 1** shows the geographic distribution of the participants.

The supervisor feedback was used to identify a subset of the Top-Performing NECA PMs. The Human Dimension assessments of the Top-Performing PMs were then compared with the remaining participants.

The results, while only exploratory and not conclusive, appear to indicate that Top-Performing PMs have distinctive human dimension traits when compared to everyone else. This study therefore concludes with the recommendation for future research to expand upon the pilot dataset and establish reliable benchmarks of Top-Performing traits.

Key:

★ 10+ PMs

★ 5–9 PMs

★ <5 PMs

Simplar Institute's Human Dimension Assessment

Researchers from the Simplar Institute developed a Human Dimension Assessment instrument that was used for this study. The assessment was structured as a web-based questionnaire which consists of the following scales: HEXACO Personality Inventory, Emotional Intelligence, and QDiSC-101 for the Project Managers. A Project Manager Performance Rating survey was given to the direct Supervisor of each Project Manager who participated. The following subsections describe each individual assessment in more detail.

HEXACO Personality Inventory (HEXACO)

In the early 2000's, Lee and Ashton developed the HEXACO (Ashton and Lee 2009; Lee and Ashton 2018). The assessment defined personality with six major dimensions: Honesty-Humility (H), Emotionality (E), Extraversion (X), Agreeableness (A), Conscientiousness (C), and Openness to Experience (O). Each dimension is further divided into four facets. Please refer to Appendix A for a detailed explanation of the HEXACO Assessment.

Emotional Intelligence Diagnostic

Emotional Intelligence (EI) is the capability of individuals to recognize and manage their own emotions and those of others. In addition to an overall measure, commonly referred to as Emotional Quotient (EQ), the EI assessment consists of four skills: Self-Awareness (SEA), Self-Management (SM), Social-Awareness (SOA), and Relationship Management (RA). There is a total of 28 questions, and respondents indicate how often they demonstrate a behavior, with a scale of never to always. Please refer to Appendix B for a detailed explanation of the four key skills.

DISC Behavioral Assessment

This study utilized QDiSC-101, which is a version developed by Dr. Avi Wiezel of the four-quadrant behavior diagnostic tool known commonly as DISC. It provides information about the respondent's workplace priorities and preferences. The instrument provides a score for work orientation (task-oriented vs. people-oriented) and communication style (reserved vs. assertive) to assign one of the four quadrants – Dominant, Inspiring, Supportive, and Cautious. Please refer to Appendix C for a detailed explanation of the four quadrants.

Performance Ratings for NECA PMs

A Project Manager Performance Rating for each Project Manager was collected from each PM's direct supervisor. Performance Ratings were divided into several categories:

- **Technical Skills:** skillsets in the areas of scheduling, estimating, identifying design errors & omissions, maintaining a strong safety record, jobsite coordination, and more.

- **Leadership & Communication Skills:** abilities in communication with owners, designers, and general contractors; capacity for motivating others; proficiency in developing the skillsets of their direct reports, and more.

- **Project Performance Outcomes:** the PM's capability to consistently drive profitable project outcomes, fitness for delivering high-profile projects on their company's behalf, readiness to be promoted, relative performance bonuses compared against peers, and more.

- **Overall Performance Percentile:** Overall performance compared to peers.

Of the 75 total participants, the top 14 project managers were selected as the Top-Performing PMs. It is noted that these PMs represented a full standard deviation above and beyond the average performance rating in the dataset (top 18% of the data sample). The remaining 61 PMs were designated as "Average-Performing" PMs. However, it should be noted that these PMs were still identified as being generally well-performing by their supervisors. This is based on their ratings of 7.6 to 7.9 out of 10, where a 5 out of 10 was defined as being "average" among all PMs the supervisor had worked with. Table 2 shows a comparison of Project Manager Performance Rating Scores of the Top-Performing PMs compared to the average-performing PMs. The Top Performing PMs were rated as being 10-12% higher performing than the Average-Performing PMs.

Question Type	Average-Performing	Top-Performing	% Difference
Overall Performance	7.9 out of 10	8.7 out of 10	+10.6%
Technical Performance	7.6 out of 10	8.6 out of 10	+12.5%
Leadership Performance	7.7 out of 10	8.6 out of 10	+11.7%

Table 2: Comparison of Project Manager Performance Rating Scores

About the Authors

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Dr. Jake Smithwick is an assistant professor at the University of North Carolina in Charlotte. His research focuses on organizational performance benchmarking within construction, facility management, and the broader built environment. His industry experience also includes field inspection of nearly 2,000 waterproofing systems (74 million square feet) across the United States, and six years in the US Air Force Reserve, assigned to the civil engineering squadron.

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Dr. Brian Lines is an assistant professor at the University of Kansas. His research focuses on innovative project delivery techniques within design and construction. Lines' research program has actively integrated with organizations to deliver more than $1 Billion in total project value.

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