

HPI + HDS

COMBINING ASSESSMENTS TO PREDICT
JOB PERFORMANCE



THE SCIENCE OF PERSONALITY



Businesses and researchers spend vast amounts of money and effort each year studying leadership effectiveness. In fact, companies spend over 40 billion annually on their leadership development programs (Fulmer, 1997). They do this with two primary objectives in mind: (a) identifying good leaders, and (b) reducing the negative impact of bad leaders.

Although there is little consensus regarding the distinguishing characteristics of good leaders, there is substantial consensus regarding the characteristics associated with bad leadership (J. Hogan, R. Hogan, & Kaiser, 2009). There are more bad managers employed today than many people realize. R. Hogan (2007) suggests that the base rate for bad managers within organizations may range from 65% to 75%, and one recent survey of managers and executives suggests that as many as 27% of their subordinates, despite being rated high in potential, are at risk for being demoted or fired for performing below the level expected of them.

Leaders may derail because they lack the key personal characteristics needed for success (R. Hogan, 1994), but more often, it is because of undesirable qualities such as bad judgment, an inability to build teams, a failure to relate well to others, or an inability to learn from their mistakes (Bentz, 1985; J. Hogan, R. Hogan, & Kaiser, 2009).

Personality measures help identify these tendencies. Both everyday (Judge, Bono, Ilies, & Gerhardt, 2002) and derailing (R. Hogan & J. Hogan, 2001) personality measures predict leadership and managerial competence. In this whitepaper, Hogan Assessment Systems (Hogan) presents results for 12 case studies showing how derailing personality measures provide value to human capital initiatives when used in conjunction with more common everyday personality instruments.

THE EVERYDAY PERSONALITY CHARACTERISTICS

R. Hogan, Curphy, and J. Hogan (1994) first distinguished between everyday and derailing personality measures. They describe the Five-Factor Model (FFM) dimensions as positive personality characteristics that others see when individuals are at their best. Everyday characteristics describe a person's potential to get along and/or get ahead in their organizations and their lives.



Research supports the validity of everyday personality assessment scales for predicting occupational performance — including leadership and managerial competence (Barrick & Mount, 1991; Judge et al., 2002; J. Hogan & Holland, 2003; Salgado, 1997; Tett, Jackson, & Rothstein, 1991). Hogan researchers have evaluated the Hogan Personality Inventory (HPI) in over 450 validation studies predicting occupational performance across a wide range of jobs and industries. Meta-analyses indicate that the estimated true validities for the HPI scales for predicting job performance are as follows: Adjustment (.43), Ambition (.35), Interpersonal Sensitivity (.34), Prudence (.36), Inquisitive (.34), and Learning Approach (.25) (J. Hogan & Holland, 2003).

In the best study yet published on the links between personality and leadership, Judge et al. (2002) conducted a meta-analysis and found that the majority of the FFM dimensions were related to overall leadership with true correlations of .24 or greater for each, except for Agreeableness ($r = .08$). The multiple R value for all five dimensions predicting leadership emergence was .53 and it was .39 for predicting leadership effectiveness (see R. Hogan and J. Hogan, 2002 for similarly strong relationships between personality and leadership).

The HPI is the first measure of normal personality based on the FFM and designed to predict occupational performance and other real-world outcomes. As such, it is an original and well-known measure of the FFM and used as a marker personality instrument in English and other languages (see Table 1 for HPI scale definitions; R. Hogan & J. Hogan, 2007).

Table 1 Hogan Personality Inventory Scales and Definitions

HPI Scale	Higher scores suggest a propensity to be...
Adjustment	steady under pressure
Ambition	leaderlike and achievement oriented
Sociability	socially proactive
Interpersonal Sensitivity	perceptive and tactful
Prudence	conforming, dependable, and conscientious
Inquisitive	analytical and imaginative
Learning Approach	concerned with building job-related knowledge



THE DERAILING PERSONALITY CHARACTERISTICS

Derailing measures of personality have a much shorter history in published, professional research on leadership, management competence, and occupational performance. Derailing characteristics represent flawed behavioral strategies that (a) reflect inaccurate beliefs about others, and (b) may negatively influence an individual's career (R. Hogan & J. Hogan, 1997). These negative tendencies emerge when people let their guard down, find themselves in stressful or novel situations, or relax their social vigilance so “they just become themselves” (R. Hogan & Kaiser, 2005). We believe that these characteristics represent extensions of everyday personality trait dimensions—they reflect extreme characteristics of normal personality that can be detrimental to performance. Due to a lack of measurement work in this area, few studies explore the validity of predicting performance from derailing characteristics in applied settings.

An exception is the Hogan Development Survey (HDS; R. Hogan & J. Hogan, 2009), which measures 11 derailing characteristics (see Table 2). R. Hogan & J. Hogan (2001) assert that these derailing characteristics coexist with well-developed social skills, which explains why people with these qualities sometimes ascend to leadership roles. Regardless of talent and social skill, however, derailing characteristics can ultimately derail careers (Bentz, 1985).

Table 2 Hogan Development Survey Scales and Definitions

HDS Scale	Higher scores suggest a propensity to be...
Excitable	moody, inconsistent, and unpredictable
Skeptical	cynical, distrustful, and fault-finding
Cautious	reluctant to change, averse to strategic risk, and fearful of failure
Reserved	socially withdrawn, distant, and unapproachable
Leisurely	indifferent to requests, covertly resistant, and passively aggressive
Bold	overly self-confident, stubborn, self-promoting and entitled
Mischievous	risk taking, limit testing, and indifferent to consequences
Colorful	attention-seeking, dramatic, and socially dominating
Imaginative	eccentric, flighty, and excessively creative and impractical
Diligent	perfectionistic, reluctant to delegate, and micromanaging
Dutiful	overly eager to please, reliant on others, and ingratiating



EARLY INCREMENTAL WORK

Fleming (2004) and Davies, J. Hogan, Foster, and Elizondo (2005) examined the HDS and the HPI in hierarchical regression analyses to predict performance. They entered the HPI in Step 1 of their models and measured the incremental validity of including the HDS in Step 2. Fleming found that, although a number of HPI scales were related to leader performance, the HDS Excitable and Leisurely scales predicted leadership ratings beyond the HPI. Fleming's study was based on a single managerial sample (N = 326). Davies, et al. used five samples (total N = 838) and aligned the predictor scales with specific domains of criterion performance. Across the studies, the addition of the HDS dimensions accounted for over twice as much variance as the HPI alone in four job performance domains: Intrapersonal Skills, Interpersonal Skills, Work Skills, and Leadership Skills.

Foster and J. Hogan (2006) used a profile approach rather than hierarchical regression to evaluate incremental validity. They developed an everyday personality trait profile, a derailing profile, and a combined profile using scales from the HPI and HDS. They then conducted a series of meta-analyses and found that the combined profile was the best predictor of job performance.

Although these studies provide initial support for the incremental validity of derailing measures, it is still useful to see how both measures work together within client organizations. The current whitepaper uses a case study approach to demonstrate ways in which the HDS adds incremental value to an organization's selection process.

OUR APPROACH

We drew 12 case studies from the Hogan archive that contained sufficient information for analyses. In each case, organizations used both the HPI and HDS as part of their evaluation process. These studies illustrate the different ways clients apply the two assessments to drive business outcomes ranging from increases in employee productivity to growth in sales revenue.

Although clients typically use the HDS for development in the managerial and professional job families, we chose a diverse sample of jobs and industries to show the effects of the derailing personality throughout an organization. The jobs in these



12 studies range from aircraft pilots to sales representatives and represent a variety of industries (e.g., law enforcement, pharmaceuticals, and finance).

CASE STUDY 1 – PREDICTING LEADER SUCCESS

A large pharmaceutical company wanted to improve its ability to identify high potential candidates by including Hogan assessments in their leadership development program. Over 100 incumbents completed the HPI and HDS. Supervisors rated their advancement potential, leadership, and overall job performance. The HPI Ambition scale was the best predictor of advancement potential. However, the HDS Imaginative scale was the best predictor of overall leadership and project management. In addition, the HPI Adjustment scale was a key predictor of overall job performance, but the HDS Excitable scale accounted for twice the variance in overall job performance when added to the profile.

CASE STUDY 2 – STRONGER LEADERSHIP POTENTIAL

A management consulting company specializing in executive coaching and team development used the HPI and HDS as part of their 360 degree feedback process. Hogan's tools aided in the identification of positive and negative personality characteristics that drive manager performance. They collected assessment data and peer ratings for 72 managers using the Leadership Versatility Index (Kaplan & Kaiser, 2006), which measures performance using a "too little" or "too much" rating scale across three performance metrics: Forceful leadership, Operational leadership, and Strategic leadership. The HPI effectively predicted performance for all three areas, with squared MRs of .23, .21, and .15 respectively. On average, including the HDS doubled the percentage of variance accounted for, resulting in squared MRs of .44, .34, and .36.

CASE STUDY 3 – INCREASED ANNUAL SALES

An international manufacturer of fragrances used in perfumes and cosmetics wanted to improve the selection of successful sales representatives. Hogan used the HPI and HDS to identify individuals best suited to perform in these challenging sales roles. Our review of sales performance data showed a favorable long-term trend, such that, as profile fit improved, performance increased. Specifically, individuals who did not meet the profile had annual sales revenue of \$875,000, whereas those who did meet the combined HPI and HDS profile delivered much stronger sales (\$4,000,000).



CASE STUDY 4 – IMPROVED SELECTION ACCURACY

A major cancer research center collaborated with Hogan to improve the selection of security guards. We studied 165 incumbent security guards using the HPI and HDS, and supervisors rated each guard on several critical performance dimensions, including client relations, dependability, and safety awareness. Three HPI scales (i.e., Adjustment, Interpersonal Sensitivity, and Prudence) predicted overall job performance, and five HDS scales also predicted critical work outcomes. Security guards who question others' true intentions (HDS Skeptical), withdraw and are uncommunicative (HDS Reserved), lack follow-through (HDS Colorful), are easily distracted (HDS Imaginative) and are reluctant to take independent action (HDS Dutiful) did not perform at the level required by the research center. The HPI and HDS composite profile correctly classified below-average performers 63% of the time and above-average performers 60% of the time.

CASE STUDY 5 – ENHANCED HIRING PRACTICES

A national building supply company sought to standardize the hiring procedures for their supervisor jobs. Hogan suggested using the HPI and HDS to identify outstanding supervisors in terms of leadership, results orientation, and overall job performance. Supervisors who fit the HPI profile were 1.5 times more likely to be rated as a high performer. When the HPI Adjustment, Ambition, Sociability, and Prudence scales were combined with the HDS Bold and Leisurely scales, supervisors who met this profile were twice as likely to achieve a strong performer evaluation compared to those who did not meet the composite profile. Furthermore, the composite profile predicted overall job performance ($R = .41$, $p < .05$) better than the HPI profile alone ($R = .19$).

CASE STUDY 6 – STRONGER POLICE PERFORMANCE

A municipal police department partnered with Hogan to improve their selection of police officers. Using the HPI, we found that successful officers stay calm under pressure (high Adjustment) and are comfortable with conflict (low - moderate Interpersonal Sensitivity). When these scales were combined with low HDS Skeptical and low HDS Imaginative scores, individuals who met the composite profile were twice as likely to be rated as a strong performer and three times more likely to be requested as a partner for critical police assignments (e.g., apprehend a drunk driver).



CASE STUDY 7 – HIGHER ACCOUNT SALES

An industry leader in producing and transporting specialized gases committed to a program that enhanced selection of account managers. Hogan matched HPI and HDS data with several indicators of sales performance. Using a composite HPI and HDS profile increased the prediction of overall job performance by 40% when compared to the HPI alone. Including the HDS as part of the selection profile also had a substantial impact on account sales. For example, account managers who fit the combined HPI and HDS profile were more likely to meet their sales goals than those who only fit the HPI profile. The composite profile consisted of HPI Ambition, Sociability, Prudence, Inquisitive, and Learning Approach scales along with the HDS Cautious and Colorful scales. Furthermore, account managers who only met the HPI profile lost, on average, \$10,500 in annual account revenues whereas managers who met the composite profile lost, on average \$6,000 in revenues.

CASE STUDY 8 – SUBSTANTIAL SALES GROWTH

A Fortune 500 financial company selling insurance, annuities, mutual funds, and bank products wanted to improve its process for selecting sales managers. Hogan used the HPI and HDS and collected sales and performance data on 85 incumbent sales managers. Managers who fit the HPI profile were twice as likely to be in the top 20% performance bracket as identified by regional management; those who fit the composite HPI and HDS profile were nearly three times more likely to be in the top performance tier. The composite profile consisted of HPI Adjustment, Ambition, Sociability, and Prudence scales along with the HDS Excitable and Bold scales. In addition, managers who fit the composite profile produced \$25,000 more in annual sales and grew their accounts at a higher rate than those who only fit the HPI profile.

CASE STUDY 9 – IMPROVED SELECTION PRACTICES

A fortune 500 communications services provider wanted to improve its ability to select account representatives. Hogan developed a HPI profile which showed that high performers stay calm under stress (high Adjustment), take initiative (high Ambition), build relationships (high Interpersonal Sensitivity) and attend to details (high Prudence). When three HDS scales (Imaginative, Reserved, and Colorful) were added to the HPI profile, candidates who fit the profile were four times more likely to be rated as a high performer as those who did not meet the composite profile.



CASE STUDY 10 – PREDICTING INTERPERSONAL SKILL

A leading, global beverage company wanted to improve its ability to identify employees with leadership potential and place them in mid-level management positions. The target population included individuals working in the company who had potential for advancement. Potential leaders tended to be outgoing (high HPI Sociability), competitive (high HPI Ambition), and engaging (low HDS reserved). The best predictor of supervisor ratings of interpersonal skill was the HPI Sociability scale ($R = .17, p < .05$), but the HDS Imaginative, Diligent, and Mischievous scales improved the prediction significantly ($R = .37, p < .05$).

CASE STUDY 11 – IMPROVED PILOT PERFORMANCE

A regional U.S. airline wanted to improve its pilot selection process because the demand for its service was growing and the company needed to increase the number of flights on its schedule. This was a challenging problem because the company had only 14 incumbent pilots, but this organization wanted a precise process to screen new applicants into the job. Hogan found several HPI scales related to overall job performance. In addition, high performing pilots were emotionally mature (low HDS Excitable), not easily distracted (low HDS Colorful), focused and disciplined (low HDS Imaginative), and self-controlled (low HDS Mischievous). Pilots who fit the composite HPI and HDS profile were twice as likely to be rated as a strong performer than those who did not fit the profile.

CASE STUDY 12 - HIGHER TERMINAL PRODUCTIVITY

A regional freight carrier desired to increase productivity at their shipping terminals by using the HPI and HDS as part of their selection process. Using assessment and objective performance data from 200 incumbent terminal managers, Hogan used the HPI to predict managers with lower operating ratios. By adding the HDS, Hogan found greater reductions in operating costs. Furthermore, a combined HPI and HDS profile increased terminal revenue by 25% and reduced, by one-half, the number of claims resulting from goods damaged at the terminal.

SUMMARY

The case studies reviewed corroborate the relationship between personality and occupational success factors, in general, and leadership, in particular. When personality is organized in terms of the generally accepted model of five factors, then this taxonomy represents the everyday of personality. All five factors are important for predicting occupational performance and career success across a range of jobs



and industries. Everyday personality factors as occupational performance predictors have a substantial history of useful applications in human resource decision-making.

Across the board, four HPI scales appear to be most effective at predicting success, regardless of job type. Strong performers tend to remain calm and thrive under stress and pressure (high HPI Adjustment), show initiative and are goal-oriented (high HPI Ambition), work effectively and cooperatively with others (high HPI Interpersonal Sensitivity), and follow rules and procedures (high HPI Prudence).

The derailing traits of personality erodes managerial effectiveness and may have severe negative consequences if left unchecked. These behaviors are most often seen during times of stress and may impede work relationships, hinder productivity, or limit overall career potential. The HDS is the only business-related inventory that measures these dysfunctional behavioral patterns. More and more companies are using the HDS for selection because the HDS adds predictive value to everyday measures like the HPI.

The HDS adds value to the selection process because derailing tendencies coexist with strong social skills, and are difficult to identify during interviews or with other standard selection methods. The HDS provides an objective method to predict how people will behave when they let down their guard and do not actively manage their public image. If these behavior patterns are recognized early, they can be ameliorated through coaching and other development programs.

In general, three HDS scales appear to be most effective at predicting success, above and beyond the HPI scales included in the selection battery. Better performers are not easily upset (low HDS Excitable), willing to let others lead, (low HDS Bold), and remain practical and task-focused (low HDS Imaginative).

The case studies described in this report provide evidence for using the HDS in combination with the HPI to screen applicants for a variety of jobs. The studies show how the assessments work together to improve the effectiveness of hiring processes. These case studies show that using the HPI and HDS in combination will yield an enhanced return on investment for the cost of selection procedures.



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