

## Incremental Validity

We often receive questions about adding instruments or scales to selection profiles. In other words, if someone is using the HPI for selection, they might inquire about the potential benefit of adding the HDS and/or MVPI. In I/O Psychology, we call this added benefit “incremental validity,” which reflects the increase in predictive validity when we add measures beyond what we are already using to predict job performance.

Nearly all of our selection profiles include the HPI. The HPI is not only our most comprehensive personality assessment, but we have more data linking HPI results to job behaviors than any other instrument. Also, because it aligns with the Five Factor Model, it is the most recognizable assessment and provides the foundation upon which we build development and coaching efforts. Therefore, when discussing incremental validity, the question usually centers on the value of adding the HDS and/or MVPI to a selection profile already containing the HPI. This study examines that question.

## The Current Study

In the past, we have often examined incremental validity within studies and expressed the value of adding predictor instruments through white papers or case studies that are specific to individual jobs. However, our growing and extensive archive of criterion studies allows Hogan to do what no other test publisher can do – examine incremental validity using data that represent a range of jobs, organizations, and industries.

We first identified studies that met four criteria: (a) contained HPI data, (b) contained HDS and/or MVPI data, (c) contained ratings of overall job performance, and (d) included matched cases (predictor and job performance scores) for at least 50 job incumbents. We identified 25 studies that met these criteria. Next, we ran a series of hierarchical stepwise regressions to examine the predictive validity of models containing only the HPI, the HPI and HDS, the HPI and MVPI, and all three. Table 1 presents these results.

Table 1: Regression Results

	HPI Only	HPI & HDS	HPI & MVPI	All Three
<i>K</i>	25	20	13	8
<i>N</i>	2621	1933	1245	557
Average <i>P</i>	1.36	2.55	3.00	3.75
Range <i>P</i>	0-3	1-5	1-5	1-7
<i>R</i>	.29	.35	.42	.54
<i>R</i> <sup>2</sup>	.09	.13	.18	.29
<i>R</i> <sup>2</sup> Adjusted	.07	.10	.15	.25

Note: Results represent sample weighted averages. Stepwise regressions included *p-values* of .10 for entry and .20 for removal. *K* equals number of studies. *N* equals total sample size. *P* represents the number of predictor scales included in the model. *R*<sup>2</sup>Adjusted represents results adjusted for potential sampling error.

Results demonstrate five things worth noting.

- 1) Using only the HPI produces results ( $R = .29$ ) that are in-line with published findings indicating that combinations of FFM scales often produce observed correlations with job performance around .30.
- 2) Results consistently increase when adding one or more predictor instruments.
- 3) Prediction increases more when adding the MVPI to the HPI than when adding the HDS to the HPI. This is likely due to a higher degree of conceptual overlap between some HPI and HDS scales (e.g., Adjustment and Excitable).
- 4) The strongest prediction ( $R = .54$ ) results from using all three assessments. Even after adjusting results to account for potential sampling error (*R*<sup>2</sup>Adjusted), the use of all three assessments accounted for 25% of variance in job performance ratings.
- 5) Results exceed observed correlations between other common predictor instruments (e.g., cognitive ability, biodata, assessment centers, structured interviews) and job performance, most of which rarely predict more than 10% of the variance in job performance ratings.

In summary, results indicate clients can expect to find significant increases in predictive validity by adding the HDS and/or MVPI to profiles using the HPI. In other words, clients can select better performers and find larger ROI results with multiple assessments.