

Schmidt & Hunter Research Summary

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The main objective in recruitment and selection is to determine how candidates are likely to perform in the available position within the relative organisation. However, this is not an easy task and with more stringent guidelines from the Human Rights and Equal Employment Opportunity Commission, Anti-discrimination Commission and relevant governmental laws developing, recruitment processes are becoming more strongly based on the scientific discipline of psychology.

Sound recruitment practices now require a tangible and often defensible link between the method of assessment used in the recruitment process and its ability to predict future job performance. That is, the assessment methods on which the selection decisions are based need to have strong predictive validity.

The greater predictive validity an assessment method has, the greater its ability to determine how well the candidate is likely to perform on the job.

Over 85 years of personnel research reports general mental ability (also known as cognitive ability) to be the most valid predictor of future work performance and job related learning (Schmidt and Hunter, 1998). Table 1 demonstrates the independent and compound validities for a variety of recruitment options (refer to Table 1).

Table 1.

Predictive Validity for Overall Job Performance of General Mental Ability (GMA) Scores Combined with a Second Predictor.

Personnel Measure	Validity (r)	Multiple R	Additional validity from adding a second predictor	% Increase in validity
GMA tests	.51			
Interview (structured)	.51	.63	.12	24%
Job knowledge tests	.48	.58	.07	14%
Integrity tests	.41	.65	.14	27%
Interview (unstructured)	.38	.55	.04	8%
Assessment centres	.37	.53	.02	4%
Biographical data	.35	.52	.01	2%
Conscientiousness tests	.31	.60	.09	18%
Reference checks	.26	.57	.06	12%
Job experience (years)	.18	.54	.03	6%
Years of education	.10	.52	.01	2%
Interests	.10	.52	.01	2%
Graphology	.02	.51	0	0%
Age	-.01	.51	0	0%

Source: Adapted from Schmidt and Hunter (1998, p.265)

Note:

- Validity (r) refers to the predictive validity of the personnel measure
- Multiple R refers to the combined predictive validity of GMA tests and the specific personnel measure
- Additional validity from adding a second predictor is the incremental increase in validity gained by using the specific personnel measure over GMA tests alone
- % Increase in validity is the additional validity from adding a second predictor represented as a percentage.

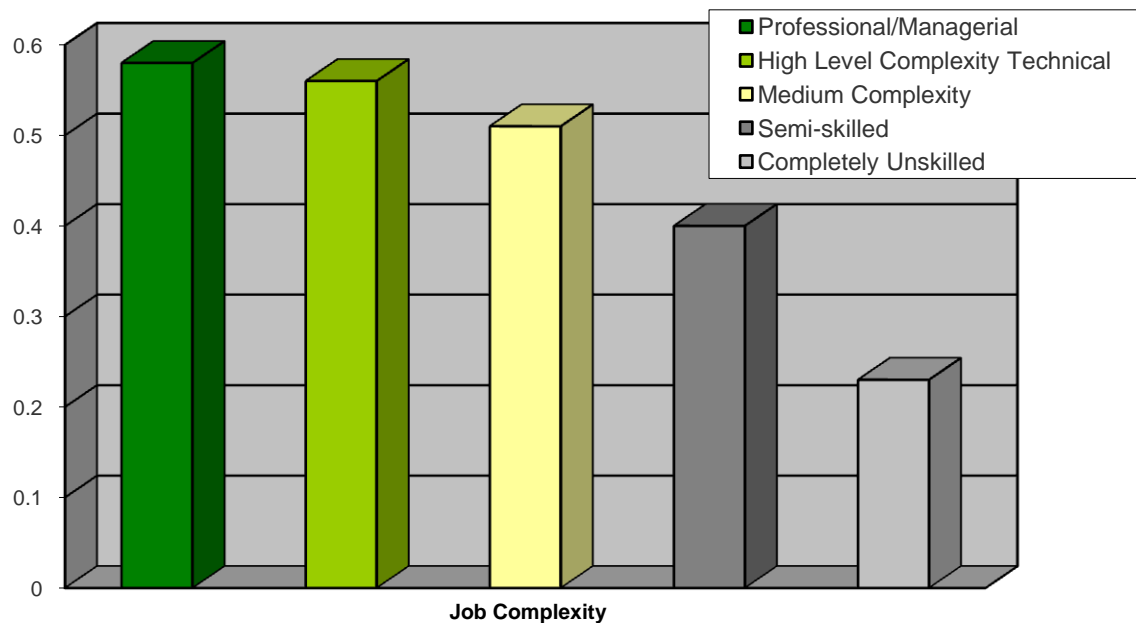
Following these results, Schmidt and Hunter suggest, "GMA can be considered the primary personnel measure for hiring decisions and one can consider the remaining personnel measures as supplements to GMA measures" (p. 266). However, the virtues of GMA tests are not merely confined to the scientific (i.e., predictive validity) outcomes they reliably produce.

In relation to other selection methods, GMA tests also have significant time and cost saving advantages. For example, structured interviews require planning, contact and evaluation time, extensive candidate communication and feedback and can be logistically problematic. Similarly, assessment centres are significantly more expensive and have less predictive validity.

Research has further investigated GMA in relation to job complexity. That is, using GMA testing as a means to delineate between jobs on the basis of complexity. Hunter and Hunter (1984) conducted a study with over 32,000 employees from 515 diverse jobs to examine the effectiveness of GMA ability to predict job performance across varying degrees of job complexity. Figure 1 demonstrates that GMA best predicts performance in jobs of greater complexity. It should be noted however, that the figure of .51 predictive validity presented in Table 1 represents jobs of medium complexity, which comprise 62% of all jobs in the economy. Medium complexity jobs include skilled blue collar workers and mid-level white collar jobs, such as more senior clerical and more junior administrative jobs.

Figure 1.

Predictive Validity for Overall Job Performance of General Mental Ability (GMA) Scores for Job Complexity.

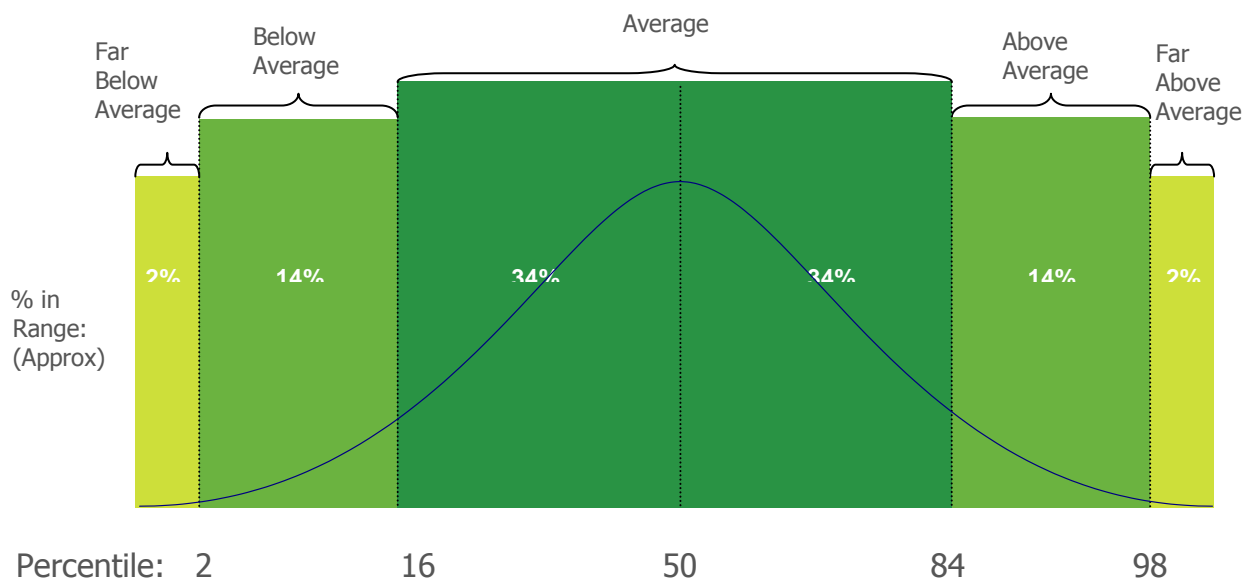


The *real world* value for using GMA tests in recruitment ensures that selection decisions are based on scientific measures of ability, in turn allowing decision to be made regarding potential performance. By selecting individuals with higher levels of ability it is intended that individual performance/productivity will increase, thus translating on an organisational level to increased profit margins.

Careful comparisons of ability levels across candidates is therefore paramount. In research, differences in performance are best measured using standard deviation. For example, a person who is in middle of the average ability range is one standard deviation away from being in the above average range. Figure 2 presents the percentage of people that fall into the different ranges of average (above average, etc.). Here it is evident that 34% of people fall either side of the mid point of average—one standard deviation.

Figure 2.

Normal Curve of Job Performance Range.



Deriving the specific monetary value of employing a person of above average GMA versus average, also involves standard deviation.

Schmidt and Hunter (1983) stated that the dollar value attributable to a standard deviation difference in performance output for employees is at minimum, equal to 40% of the average wage for that position. As an example, assume the average wage for a job is \$40,000 per year, the standard deviation would then be approximately \$16,000. An employee performing at the 84th percentile is producing \$16,000 more per year than an average employee (50th percentile).

Furthermore, the greater the difference in performance the greater the financial benefit. That is, an employee performing at the 98th percentile (far above average), when compared to an average employee (50th percentile) is producing \$32,000 more per year. In an organisational context, employing 10 people who perform at an above average level (via such personnel measures as GMA tests) versus an average level, the improvement in output would be \$160,000 per year.

Thus, using personnel selection methods with high predictive validity ensures that decisions can be made with a stronger degree of certainty and confidence. In this way, using cognitive ability measures in conjunction with more traditional methods such as an interview, maximises the predictive power of the selection process.

Organisations that approach recruitment in this manner strengthen their competitive advantage and optimise their sourcing of the candidate pool.

References

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