



EXPLORABLE
Think Outside The Box

Published on *Explorable.com* (<https://explorable.com>)

[Home](#) > How Valid is the G Factor of Intelligence?

How Valid is the G Factor of Intelligence?

Lyndsay T Wilson 4.2K reads

A test is considered valid if it has a high correlation with performance on some external skill. The general factor of intelligence, *g*, turns out to be an excellent predictor for performance in a wide range of areas.

One way of measuring an IQ test's validity is through a validity coefficient, which shows the degree of correlation between a score on the test and some external criterion. A validity coefficient ranges between 0 and 1.00, with a higher score indicating a larger relationship.

Before reading on, see if you can predict which areas of performance an IQ test for *g* correlates highly with. In other words, if you performed well on an IQ inventory, which other areas could you also expect high performance?

1. Academic
2. Health and mortality
3. Job performance
4. Relationships
5. Job prestige and total income
6. Mental health



EXPLORABLE

Quiz Time!



Quiz:
Psychology 101 Part 2



Quiz:
Psychology 101 Part 2



Quiz:
Flags in Europe

[See all quizzes](#) ⇒

The G Factor and Academic Performance

If you guessed that academic performance is strongly correlated with g , you're right. Researcher Robert L. Thorndike claimed that up to 90% of the variance in school achievement is due to general intelligence, when certain unpredictable factors are controlled for. This correlation is understandable given that g measures a person's ability to learn, process, and comprehend new information.

Several English studies have shown that g correlates highly with a factor derived from overall GSCE scores. The American SAT can likewise be thought of as a test for g (correlations of up to .82). Furthermore, those SAT scores are highly correlated (coefficient of .55) with GPA during the first year of college, giving evidence that scholastic and academic achievement ultimately comes down to g .

The G Factor and Professional Performance

Meta analyses have found that job-specific aptitude tests are not as accurate a predictor of work performance as g , which has a validity coefficient of around .55. Interestingly, past work experience, personality type and emotional intelligence scores all have lower predictive validity compared with g . This is not to say that these factors do not explain some of the variance we see in job performance, only that g explains a greater proportion as a single factor. New research suggests that emotional intelligence and general cognitive ability are complementary – i.e. low ability on one can be compensated for by the other.

The validity coefficient rises for job training and for more complex jobs. This makes sense if we consider that g is essentially a measure of how well a person can take on new skills and information.

Naturally, the job in question plays a large role in how much general cognitive ability will come into play, and how job performance is measured. Several methodological concerns arise when researchers try to assess something like overall job performance, though. For example, things become difficult when unrelated research shows that supervisors are more likely to rate attractive employees as better at their jobs!

What about job prestige and income?

Scores on g predict performance on a particular job, but does it predict the prestige, complexity or level of the job itself? In other words, do those with higher g gravitate end up in more highly esteemed jobs? Some studies suggest it does, but only when taking average scores over a profession – the correlation is somewhat lower when individuals are considered.

Income and g show a lower correlation of roughly .40, increasing with increase of education level and age.

Can the G Factor Predict Relationship Success, Happiness or Longevity?

The field of cognitive epidemiology has produced studies showing that higher IQ scores in children are correlated with better health outcomes in adulthood. However, this is a correlation and not a causal relationship – socio-economic status may be an underlying factor accounting for both.

As for other measures of human success, IQ is a less reliable predictor. Some research has shown that crime, school delinquency and accidents are negatively correlated with *g*. The question of whether intelligence allows for greater mental wellbeing or happiness is a more complex question, however.

Source URL: <https://explorable.com/g-factor-validity>