



# THE MCQUAIG MENTAL AGILITY TEST

## Research Overview

Prepared by Rick D. Hackett, Ph.D

### A Test of General Mental Ability

The McQuaig Mental Agility Test (MMAT) is a measure of general intelligence (i.e. cognitive ability) providing an overall score of a person's ability to process information efficiently and effectively. It is a 15 minute (timed) test consisting of 50 multiple-choice formatted questions of verbal comprehension, mathematical ability and reasoning. To be completed without the use of a calculator or dictionary.

### Developed for Selection

The MMAT was developed to aid in employee selection decisions. Myriad studies consistently show that measures of general intelligence are among the very strongest predictors of performance across performance metrics, jobs, job levels, occupations, organizations, countries and demographic groups. The MMAT is developed consistent with the guidelines of human rights' regulatory bodies such as the United States Equal Employment Opportunity Commission (EEOC). The psychometric properties of the MMAT meet professional standards.

The MMAT demands reading ability at high school level. It is available in English and is administered on-line or in paper-and-pencil format

### Norms

MMAT norms have been established from a total sample of more than 6,800 test-takers from across 15 different countries, predominantly from Australia, United Kingdom, Ireland, New Zealand and the United States. Sub-group norms are established for each of: education level, gender, English/non-English as first language, select ethnic groups, and select countries.

## Developmental Highlights

The development of the MMAT followed a sequence of steps:

1. MMAT items written to assess numeracy, verbal fluency, comprehension, analytical thinking and spatial relations.
2. Fifty items with the strongest psychometric properties retained.
3. MMAT reliability established.
4. MMAT as a measure of general intelligence established.
5. Measures of general intelligence (e.g. MMAT) predict job performance across nations, ethnicities, gender, age, jobs, job levels and occupations.
6. MMAT norms developed by gender, age, race, language, country.



## Reliability

Test-retest reliability for the MMAT was established at .84, and internal consistency reliability was established at .83, both well above the .70 benchmark professional standard for HR selection tests.

## Construct Validity

The MMAT correlates highly (.72) with other well established tests of general intelligence suggesting that it measures what it was designed to measure. Further, MMAT scores follow a near-normal distribution, consistent with decades of research showing that general intelligence is normally distributed throughout the population.

## Predictive Validity

An extensive body of studies conducted over several decades of research consistently show that general intelligence is one of the strongest predictors of job performance. Specifically, intelligence tests such as the MMAT reliably and positively predict performance across jobs, job levels, occupational groups, ethnicities and cross- nationally.

## Test Fairness

MMAT scores show considerable similarity across gender, race, age groupings and country, and there is abundant and compelling studies that show that there is no predictive bias associated with measures of general intelligence when used in employee selection. That is, measures of general intelligence, such as the MMAT, are equally predictive of job performance of members of both minority and non-minority groups. Where challenged, such measures have consistently and successfully held-up in both Canadian and U.S. courts.

## Scoring Options

The MMAT is typically completed online, although a paper-and-pencil alternative is available.

## Major Applications

Employee selection

## About the Author

Dr. Hackett received his Ph.D. in industrial-organizational psychology in 1985 from Bowling Green State University (Ohio) and is Professor of Human Resources Management and Canada Research Chair of Organizational Behaviour and Human Performance at the DeGroote School of Business, McMaster University. He is a Fellow and Past- President of the Canadian Society for Industrial-Organizational Psychology of the Canadian Psychological Association and Associate Editor of the Journal of Business and Psychology.