



PERGAMON

Personality and Individual Differences 32 (2002) 445–451

---

---

PERSONALITY AND  
INDIVIDUAL DIFFERENCES

---

---

www.elsevier.com/locate/paid

## Sex differences in fluid intelligence among high school graduates

Roberto Colom <sup>a,\*</sup>, Oscar García-López <sup>b</sup>

<sup>a</sup>Facultad de Psicología, Universidad Autónoma de Madrid, 28049 Madrid, Spain

<sup>b</sup>Universidad Europea de Madrid (UEM), 28670 Madrid, Spain

Received 27 July 2000; received in revised form 22 January 2001; accepted 8 February 2001

---

### Abstract

There is contradictory empirical evidence concerning the problem of whether there is a sex difference in general intelligence. Some researchers claim that there is a sex difference, relying on the *summation* of the standardized sex differences in cognitive tests measuring verbal, spatial, and reasoning abilities. Other researchers state that there is not a sex difference in general intelligence; they propose that general intelligence should be conceptualized as *g*. *g* is not the result of the simple summation of tests scores, but a source of variance evidenced by the *correlation* among several diverse tests. We think it is possible to resolve this conflict. Fluid intelligence (Gf) is usually conceived as the core of intelligent behavior [Carroll, J. B. (1993). *Human cognitive abilities*. Cambridge: Cambridge University Press]. Therefore, if there is a sex difference in general intelligence, it could be *systematically* detected in measures of Gf. Three measures of Gf were used in the present study: the PMA Inductive Reasoning Test, the Advanced Progressive Matrices (APM), and the Culture-Fair Intelligence Test (Scale 3). A total of 4072 high school graduates was tested (1772 females and 2300 males). The results reveal that females outperform males in the PMA Reasoning test, that males outperform females in the Raven, and that there is no sex difference in the Culture-Fair Test. Therefore, given that there is no systematic difference favoring any sex in the measures of Gf, and that there is no sex difference in the best available measure of Gf (the Culture-Fair Test), it is concluded that the sex difference in fluid intelligence is non-existent. © 2002 Published by Elsevier Science Ltd. All rights reserved.

*Keywords:* Sex differences; Intelligence; Fluid intelligence; High school graduates; Advanced progressive matrices; Primary mental abilities; Culture-Fair Intelligence Test

---

---

\* Corresponding author. Tel.: +34-91-397-41-14; fax: +34-91-397-52-15.

E-mail address: roberto.colom@uam.es (R. Colom).

## 1. Introduction

Lynn (1994, 1999) has challenged the view that there are no sex differences in general intellectual ability. He and his colleagues reported data from several countries in support of the alternative view (Allik, Must, & Lynn, 1999; Hattori & Lynn, 1997; Lynn, 1994, 1998b, 1999). Their results are based on the summation of the standardized sex differences in several cognitive batteries. However, Mackintosh (1996, 1998), Jensen (1998), and Colom (Aluja, Colom, Abad, & Juan-Espinosa, 2000; Colom, García, Juan-Espinosa, & Abad, 2001; Colom, Juan-Espinosa, Abad, & García, 2000) disputed Lynn's view on different grounds.

Mackintosh (1996) maintains that general intelligence must be defined as fluid intelligence (*Gf*) and measured by the Raven. This author cites Israeli military conscript's data to show that there are no sex differences on the Raven. However: (1) the test used by the Israeli army was not the Raven but an adaptation of it (Lynn, 1998c); and (2) the female sample was not fully representative (Flynn, 1998). Lynn (1998a) states that the Israeli data support the evidence that adult males have higher mean reasoning ability than females.

Jensen (1998) proposes that general intelligence should be conceptualized as psychometric *g*. General intelligence is represented by a column-vector defined by the *g* loadings of several diverse tests. The scientific construct of general ability rests on the correlations among test scores, rather than on their summation. General ability is a source of variance evidenced by the correlation between several diverse tests, each of which reflects general ability (*g*), group factors, and test specificity. However, Lynn and his colleagues misrepresent Jensen's view:

He [Jensen] contends that intelligence should be conceptualized as Spearman's *g* measured as the first principal component from a set of tests containing a range of different kind of abilities (Allik et al., 1999, p. 1138; see also Lynn, 1999, p. 8).

It is a misunderstanding to think about Spearman's *g* as if it were a single score. *g* factor scores are not pure measures of the *g* factor of the test battery from which it was extracted. An individual's *g* factor score is calculated as a *g*-weighted mean of the individual's standardized scores on each of the subtests. Therefore, it is contaminated by other factors (and/or test specificity). This fact has an effect when the sex issue is at hand: the use of *g* factor scores either increase or decrease the mean sex difference depending on the tests analyzed.

To surpass this problem, Jensen (1998) proposed the method of correlated vectors, which compares the vectors defined by the *g* loadings of a variety of tests and, for instance, the standardized mean group differences in those tests (*d*). The statistical test of the hypothesis concerning mean sex differences is the correlation between the vector of the tests' *g* loadings and the vector of standardized sex differences on each of the tests (*d*), taking the tests' reliability coefficients into account. A positive correlation means that the higher the *g* loading of the test, the higher the mean sex difference. However, the mean correlation found by Jensen after the analyses of five different batteries was 0.116, a value suggesting a negligible sex difference in *g*.

Colom et al. (2000) used the method of correlated vectors with the largest sample on which a sex difference in *g* has ever been tested ( $n=10,475$ ). They found a mean correlation of 0.000. Colom, Garcia et al. (2001) used the same method with the Spanish standardization of the WAIS-III

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات