

IQ and fertility: A cross-national study

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Abstract

Many studies have found a small to moderate negative correlation between IQ and fertility rates. However, these studies have been limited to the United States and some European countries. The present study was a between-nation study using national IQ scores and national fertility rates. There were strong negative correlations found between national IQ and three national indicators of fertility.

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1. Introduction

1.1. IQ and fertility

Numerous studies have confirmed that in the United States and parts of Europe there exists a consistent negative relationship between IQ and fertility. Simply stated, it has been found that those with lower levels of IQ tend to have more children than those with higher levels of IQ. Lynn (1996) provides a comprehensive review of the studies demonstrating the negative IQ–fertility relationship in the US and a few European countries (England, Scotland, Greece) up until the mid 1990s. Lynn averaged the results of three studies in the US and found an average IQ–fertility correlation of -0.11 in Whites, and -0.27 in Blacks.

Since Lynn's review was published, other studies have continued to demonstrate the negative relationship between IQ and fertility. Rodgers, Cleveland, van den

Oord, and Rowe (2000) used data from the National Longitudinal Survey of Youth (NLSY). The NLSY was a sample of 11,406 young people in the US between the ages of 14 and 22, sampled in 1979. The sample was surveyed every year until 1994 (when frequency became every other year) on various personality, cognitive and demographic measures. Parental IQ was measured with the Armed Forces Qualifying Test, which is the IQ test embedded in the Armed Services Vocational Aptitude Battery. The authors concluded that, unambiguously, low-IQ parents make larger families.

Lynn and Van Court (2004) used data from the General Social Survey (GSS), which is an annual nationally representative survey of individuals in the US over 18 years old. Data was used from the years 1990, 1991, 1992, 1994, and 1996, because in these years the survey included a 10-item multiple choice vocabulary test. The GSS data that they also collected were number of children of each respondent, race and sex. The authors reported an overall correlation between IQ and fertility of -0.17 . They also replicated the findings by Vining (1982, 1995) that showed the IQ–fertility

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correlation to be approximately twice as large in the US Black sample, as in the US White sample. Thus, studies published after Lynn (1996) appear to confirm the negative IQ–fertility relationship.

One clear limitation of the IQ–fertility research is that the studies have predominantly used samples drawn from the United States, with a handful of studies using European countries. In essence, these are within-nation studies, and it is still an open empirical question as to whether or not the findings can be generalized to non-Western populations. The purpose of this study was to do a between-nation analysis of the IQ–fertility relationship using national averages of fertility rates and IQ. The countries in the present study represent all parts of the world, not just Western nations.

1.2. Hypothesis

Based on the results of within-nation studies, it is predicted that there will be a statistically significant, small to moderate negative correlation between national IQ and fertility rates between nations.

2. Method

2.1. Measures

2.1.1. National IQ

National IQ scores were obtained from the data published by Lynn and Vanhanen (2006). They used published data from around the world and were able to calculate IQ scores for 113 countries. National IQ scores were calculated with the United Kingdom used as a reference point, with a mean of 100, and a standard deviation of 15. Their analysis showed that the national IQ scores were correlated with various measures of global inequality, with lower IQ countries tending to have poorer outcomes. This was an extension of Lynn and Vanhanen's (2002) study which showed that the national IQ scores were positively correlated with measures of per capita income, indicating that nations with higher IQ scores tended to have stronger national economies.

Barber (2005) used Lynn and Vanhanen's (2002) national IQ scores to demonstrate their relationship with various national demographic variables. It was found that national IQ was significantly related to the following variables: proportion of workers in agricultural labor (-0.70), proportion of low birth weight babies (-0.48), illiteracy rates (-0.71), infant mortality rates (-0.34), secondary school enrollment ratio (0.72) and gross national product (0.54). Thus, there is some indication that the national IQ scores have demonstrated predictive validity.

2.1.2. Indicators of fertility

National indicators of fertility were obtained from the United States Central Intelligence Agency (CIA) World Factbook website United States Central Intelligence Agency, 2005 (<https://www.cia.gov/cia/publications/factbook/index.html>) during August/September 2005 and January 2007. Three demographic statistics were used as indicators of national fertility. The first indicator is Total Fertility Rate (TFR), which the Factbook defines as “the average number of children that would be born per woman if all women lived to the end of their childbearing years and bore children according to a given fertility rate at each age.” The Factbook indicates that TFR is the best direct indicator of fertility. The second indicator of fertility is Birth Rate (BR), which the Factbook defines as “the average annual number of births during a year per 1000 persons in the population at midyear.” The third indicator of fertility is Population Growth Rate (PGR), which the Factbook defines as “the average annual percent change in the population, resulting from a surplus (or deficit) of births over deaths and the balance of migrants entering and leaving a country.” This is an imperfect measure of fertility, as it includes non-fertility based data such as immigration, migration and death rates. All three fertility indicators were available for 111 of the 113 countries for which Lynn and Vanhanen (2006) provided IQ scores. None of the three indicators were available for the Mariana Islands, and only TFR was available for Serbia.

3. Results

3.1. IQ–fertility correlations

The Pearson correlations between national IQ scores and the three national fertility indicators were as follows; Total Fertility Rate ($r = -0.71$, $p < 0.01$), Birth Rate ($r = -0.75$, $p < 0.01$), and Population Growth Rate ($r = -0.52$, $p < 0.01$).

4. Discussion

The correlations found between national IQ scores and national fertility indicators supported the hypothesis that they would be negatively correlated. However, it was hypothesized that the correlations would be small to moderate, as has been found in previous within-nation studies. The correlations reported here are large, ranging from -0.52 to -0.75 . Thus, there appears to be a clear relationship between national IQ and fertility rates. There is a strong tendency for countries with lower national IQ scores to have higher fertility rates and for

countries with higher national IQ scores to have lower fertility rates.

The question that is raised by this finding is one of causality. Why are national IQ scores so strongly correlated with national fertility rates? There are a variety of possible speculative explanations, all of which are in need of further empirical testing. One possible explanation is that the IQ–fertility relationship is mediated by a third variable, that variable being economics. National IQ scores are associated with a country's economic status (Barber, 2005; Lynn & Vanhanen, 2002). It is possible that countries that are poorer have lower quality educational systems, lower quality health care, and more difficult access to birth control, all of which may contribute to higher fertility rates.

Another possible causal explanation is differential K theory (Rushton, 2004). This theory proposes that there are a variety of variables that cluster together, based on an evolved history, in order to maximize survival, growth and reproduction in a given environment. These variables include gestation time, rate of maturation, fertility rate, brain size, intelligence, health and longevity. According to this theory, individuals who are more K selected will have higher IQs and lower fertility rates. It is possible that countries with higher IQ scores and lower fertility rates have larger aggregates of high K selected people than countries with lower IQ scores and higher fertility rates. Of course, it is possible (and likely) that the

IQ–fertility relationship has multiple causes working simultaneously. These explanations are speculative and in need of further empirical testing.

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