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Retirement, Corruption, and Cognitive Decline

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Abstract
The conclusions of Rohwedder and Willis (2010) that retirement from the workforce leads to cognitive decline was based on evidence from international correlational studies combined with insufficient assessment of alternative explanations. The same arguments and linkages are drawn for measures of corruption internationally, as well as other variables, showing that there is insufficient evidence to implicate retirement in cognitive decline.

The findings by Rohwedder and Willis (2010) were published in both newspapers and on television shows, and presented as evidence of a positive and causative relationship between retirement and cognitive decline in the United States, England, and Europe. The authors rely on data from 20-item recall experiments in 13 countries using ELSA, SHARE, and HRS studies but never identify cross-country differences in populations, sampling methods, language, or experiment designs. They simply say that these experiments were 'comparable' and conveniently avoid the external validity issue of non-probability sampling.

The number of countries included in the study varies between figures and eventually totals 15, which is two more than originally indicated in the introduction. The authors do not address the addition or omission criteria for the mentioned countries from any of the figures, nor do they offer an explanation of the presence of two countries (Canada and Japan) that do not fit the survey criteria established in the research question. The reader wonders whether the United Kingdom and England are different countries, as each is represented in different figures. Moreover, the sample size of only 13, or even 15, countries yields moderately reliable results at best.

The authors undermine their own arguments when they attempt to parallel fluid and crystallized intelligence with economic theories of investment in human capital by mentioning that both fluid and crystallized intelligence are responsible for different aspects of memory, each of which begin declining at different rates from the early 20's to the mid-30's. If the memory begins declining well before an individual reaches retirement, this alone is a plausible explanation for the differences in performance. The authors take into account no other blatantly relevant factors, such as type of employment, access to health care, family history, worker's compensation availability, retirement plans, etc., yet make a causative conclusion that early retirement negatively impacts cognition using only a 20-item recall and vague national retirement

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policies as an explanatory variable.

The economic variables tested for prediction of cognitive scores are hand-picked and transformed in various ways. The authors offer no defense against the possibility that the hand picking lead to an incorrect, even pre-determined, conclusion. To illustrate this point, instead of using percent not working for pay, we plotted data on the relative degree of corruption in the same countries plotted by Rohwedder and Willis (2010). The degree of corruption is the percentage of managers surveyed that ranked corruption as a major business restraint (NationMaster, 2010).

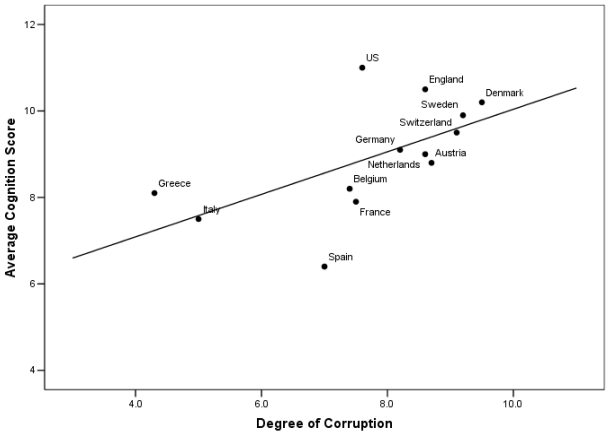

Fig. 1. Scatterplot of relation between cognition scores and the degree of corruption (for 13 countries (r = 0.60; R^2 = .36; p<0.05). The degree of corruption is is the percentage of managers surveyed that ranked corruption as a major business restraint.

There is a significant correlation with an r of .60 (p=0.008). Using the same line of arguments as used by Rohwedder and Willis (2010), we will first conclude that either widespead corruption causes higher cognitive scores, or that higher cognitive scores cause widespread corruption. Like the authors, we have injudiciously chosen to avoid addressing which is the causative factor. Second, we will argue that since it is unlikely that degree of corruption is determined by the effectiveness of the policing force or by other factors unrelated to cognition, that corruption must cause the increase in cognitive scores. The degree of association of cognition with corruption is comparable to that of its association with percent not working for pay, therefore our final conclusion is that corruption is beneficial to cognitive development and its promotion should be considered by all countries.

The authors illuminate the weakness of their argument when they point out that 'cognitive decline or the increased cognitive demands of jobs could lead some people to retire earlier than those who have not suffered noticeable decline'. The authors, by their own admission, have attempted to turn a weak association into a 'quantitatively important and causal' relationship between retirement and mental decline by forcing relationships between public policy and cognition that in fact do not exist.

Neither individuals nor government policies should intentionally alter retirement age for the reason of maintaining cognitive function, nor should we advocate that our senior population remain in the workforce unnecessarily, until a study with a sound experimental design has been conducted.

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