Is MENSA membership a reasonable proxy for high IQ sampling?

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Abstract

A seemingly common practice of using MENSA membership as proxy for high IQ sampling is discussed. Perhaps not surprising, the conclusion questions such a strategy. A research case is used, emphasizing the care which is needed when drawing conclusions using this sampling technique.

Keywords: IQ, Intelligence, value of boasting, counter signalling, MENSA

1 Introduction

In 1968, a note by Max L. Fogel [7] "opened" up the MENSA population for research. Seemingly, this made research related to high IQ and potential causalities (or associations which seems to be the popular term these days) with all kinds of

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human characteristics easier and cheaper. As long as conclusions are limited to inference on MENSA members, this is unproblematic. However, as this article will discuss in forthcoming paragraphs; making conclusions, or inferring on the general high IQ population based on empirical information gathered from MENSA members, may be questionable.

In section 2, some simple estimates on MENSA popularity are performed. These estimates indicate a very low rate of memberships, both in the US as well as globally. This raises an interesting question – Why? This question is discussed and analysed in sections 3 and 4. In section 5, an actual article is examined, with – as this author sees it – obvious questionable conclusions. Conclusions that some researchers, perhaps more serious than me, even might characterize as dangerous. Section 6 concludes.

2 Some relevant facts and figures

According to MENSA's own US web pages [2], the organization contains 50.000 members. Using a reasonable approximation of 300 million US citizens, this organization hence contains a share of $\frac{50 \cdot 10^3}{300 \cdot 10^6}$ or around 0.2%.

Given that MENSA claims to be "the home" of the 2% most intelligent, it is not a very popular organization. Only around $100 \times \frac{50 \cdot 10^3}{0.02 \cdot 300 \cdot 10^6} \approx 0.83\%$ of those who could be members are in fact members of the US branch.

On a global basis, this image is even sharper, as world-wide MENSA only has 134.000 members [1], which constitutes only[1] $\frac{134 \cdot 10^3}{0.02 \cdot 7.6 \cdot 10^9} \approx 0.09\%$ of eligible members.

The fact that US citizens seem to have a much greater affinity for MENSA membership than the global population may of course be an interesting observation by itself. However, it is of limited relevance here. The main interesting outcome of this discussion is that MENSA members constitute a tiny fraction of the 2% with (by definition) high IQ.

3 Who are members of MENSA?

The simple calculations above raises the obvious question. Why are so few of people with sufficiently high IQ members of MENSA? Surely, organizational memberships do not in general spawn the whole population of eligible members, but

[1] Using 7.6 billion as a reasonable estimate on world population.

with the prestige of this type of organization one should perhaps expect higher member frequency. Surely, the reason for joining MENSA may not only be a signal to the rest of the world that you are an intelligent person. Even intelligent people may encounter (for instance) loneliness, and organizational affiliation may serve positively in such a respect.

Casual internet empiric's does however tell a different story. Many voices claim that maybe MENSA membership is not such a good idea. Statements raging from direct insults: (quoting)

> "In short, it's not actually *smart* to flash your Mensa card, and if you *were* smart, you'd know not to do it." [19]

to sheer fun

> "II you're smart enough to be in Mensa, you should be smart enough to realize how much everyone else hates people in Mensa." [9]

Statements representing similar views can be found in [15, 3, 4]. Surely, such statements are not scientific. However, a quick introduction to and discussion of a special branch of economic theory should prove that there are in fact good reasons to believe that statements of the above type actually may be of relevance.

4 Signaling and countersignalling

Signalling, originally introduced in [14], may be considered to be a special branch of games with incomplete information (see e.g. [8]). Signalling games deal with situations were players are hidden types for other players, and can choose to signal their type with varying degree of truthfulness. For instance, a poor man who wants to appear as rich, may borrow money and buy and expose a Ferrari to signal richness to his neighbours.

Reality has however more to offer than signalling alone. For instance, nouveau riche flaunt their wealth with luxurious houses, expensive cars or Rolex watches, while the old rich sometimes choose modesty. Why is this? One explanation can be found in an article by Feltovich et. al [6][2], where the concept of countersignalling is introduced. Feltovich et. al.'s major finding can be summarized by a quote:

[2]See also [21] for a less demanding version.

> "We find that countersignalling can emerge as part of a standard perfect Bayesian equilibrium in which all players are forming rational beliefs and are acting rationally given these beliefs."

For those less familiar with incomplete information game theory, the quote indicates that both signals and countersignals can co-exist in a solution of a game, for instance between rich people of different types (nouveau, old) or students of different types (bright or less bright). Furthermore, the really rich people or really bright students will typically choose countersignalling, as their equilibrium strategy.

The analogy to MENSA and High IQ should be evident[3]. As pointed out in section 2, not all high IQ persons are members of MENSA. In my opinion, one important reason for this might simply be that people with high IQ are different (like most people) and if any humans intuitively or by knowledge should have a chance of understanding signalling and counter signalling, these 2% should be the ones.

By itself this is neither very revolutionary nor necessarily relevant for IQ research. However, as the next paragraph will reveal, it may have severe consequences for potential lack of representativity, when sampling in a High IQ populations is performed by using MENSA membership as a proxy for high IQ.

5 An interesting recent case

In [11], the authors presents a study identifying "associations" between high IQ and various patological human charateristics – both pshycological and physiological. Apart from the fact that they ask quite sensitive questions by a questionnaire, and hence take for granted that all respondents answer truthfully[4], and also using national survey data as the control group[5], the obvious question to raise is representativity or perhaps lack of such when MENSA membership constraints the sampling technique. Are MENSA members representative for the high IQ population?

[3] MENSA members play the role of the nouveau rich, while the non-MENSA members keep on beeing exatly that – non-members.

[4] See for instance [18] for potential pitfalls that may lead to.

[5] Are national survey data gathered in a reasonable similar way as the questionnaire used in this research?

Surely, arguments in previous sections at least should put a serious question mark to any answers to this question. And of course, the authors provide strong conclusions. Let me quote parts of their conclusion:

> "We have provided evidence to demonstrate that *those with high intelligence* are at significantly greater risk for the examined psychological disorders and physiological diseases; ..."

Frankly, this statement is simply incorrect. If they had written:

> "We have provided evidence to demonstrate that *US MENSA members who have agreed to receive questionnaires and have chosen to respond to our questionnaire – hopefully truthfully* are at significantly greater risk for the examined psychological disorders and physiological diseases; ...",

it may have had some merit. But of course, such a conclusion could be hard to publish. After all, who would be interested in the pathology of the tiny fraction of US MENSA members.

6 Conclusions

I believe I have answered the title question with a NO. Doing research implies a great responsibility. Especially, when dealing with topics that provoke strong feelings among humans. Insanity, serious disease and Intelligence are such topics. As such, one should expect more care from researchers, reviewers and journals. I would perhaps not have written this text if this was an exception. Unfortunately, it is easy to find many similar articles, typically where US MENSA might be substituted with German or UK MENSA; but with similiarity in the conclusions – se for instance [16, 13, 10, 17, 20] for just a few of probably many more examples.

Additionally, this kind of research, provoking feelings, are also of relevance for media. My first connection to this article was in fact established through the Norwegian research website `forskning.no` [5], who presented this article with the (Norwegian) title

Er intelligente personer mer disponert for psykiske lidelser?

Mange har en oppfatning om at det er slik. Nå bekrefter en studie sammenhengen.

or translated to English:

Are intelligent people more disposed to psychological disorders?

Many believe this is the case. Now, a study confirms the connection.

Being a professor myself, I would at least hope for more critical research and reviewing, if the "Mad professor – myth" [12] is to be confirmed.

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