

# Effects of personality, perspective, and question format on overconfidence

Štěpán Bahník<sup>1</sup> & Marek Vranka<sup>2,3</sup>

<sup>1</sup> Faculty of Business Administration, University of Economics, Prague, Czech Republic, bahniks@seznam.cz, @bahniks, www.bahniks.com

<sup>2</sup> Faculty of Arts, Charles University in Prague, Czech Republic, vranka.marek@gmail.com, @mVranka, www.pless.cz/en

<sup>3</sup> Faculty of Social Sciences, Charles University in Prague, Czech Republic

## HIGHLIGHTS

- More than 5,000 university applicants took a scholastic aptitude test used in university admissions.
  - Participants predicted their results in the test.
  - We measured the effects of:
    - **perspective** (predicting from the perspective of *self* x *family and friends*)
    - **question format** (predicting either how many of the other test-takers will be *better* x *worse*)
    - **personality measures** (*narcissism*, *self-esteem*, and *mindset*)
- on overconfidence and accuracy of the predictions.

## METHODS

### Participants

5,381 participants filled a voluntary questionnaire given before the General academic prerequisites (GAP) test used for university admissions in the Czech Republic.

### Procedure

Participants were asked to predict their results in the GAP test. In a 2x2 design, we varied whether participants stated the percentage of other test takers who will get *better* or *worse* results than them and whether they answered according to their *own estimate* or according to *what people close to them would say*.

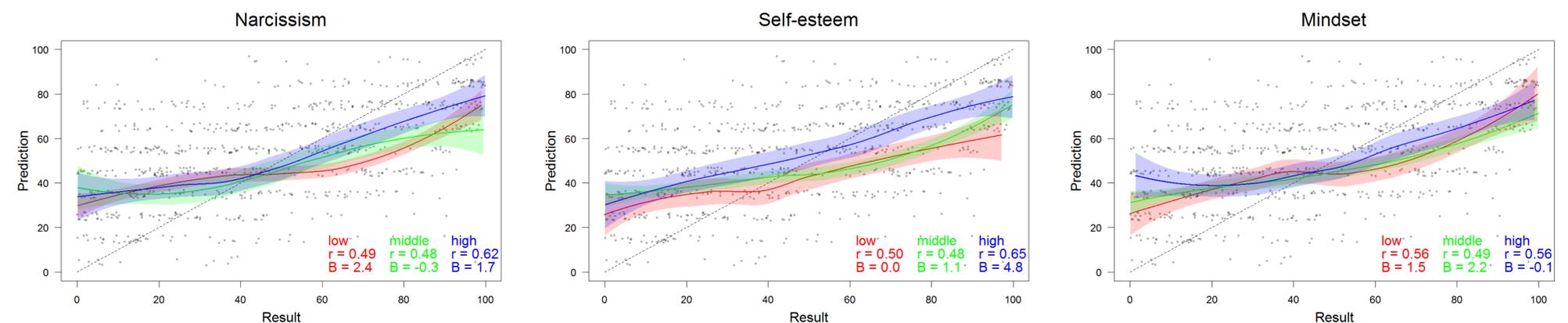
### Personality measures

We administered the *single-item self-esteem scale* [1]: “I have high self-esteem.”, the *single item narcissism scale* [2]: “I am a narcissist.”; and a *short measure of mindset* [3] consisting of two items: “I can learn new things, but I can’t really change my basic intelligence” and “I have a certain amount of intelligence and I really can’t do much to change it”. All items were answered on a 7-point scale ranging from strongly disagree to strongly agree.

## RESULTS

The results showed a general overconfidence bias,  $b = 9.11$ , 95% CI = [8.47, 9.76]. This bias was larger for participants predicting their results from the perspective of others,  $b = 5.01$ , 95% CI = [3.72, 6.30], and it was smaller for participants who made the comparison in terms of how many percent of students would be worse than them,  $b = -6.40$ , 95% CI = [-7.69, -5.11]. Participants’ results were positively associated with their predictions, however, the association was far from perfect,  $b = 0.337$ , 95% CI = [0.315, 0.359]. The accuracy of the prediction was better for those who predicted the percentage of worse participants,  $b = 0.068$ , 95% CI = [0.024, 0.112], but it did not differ significantly based on the perspective,  $b = -0.030$ , 95% CI = [-0.074, 0.014].

All three studied personality characteristics were associated with higher overconfidence bias; narcissism,  $b = 1.11$ , 95% CI = [0.73, 1.49]; self-esteem,  $b = 2.47$ , 95% CI = [2.06, 2.88]; and growth mindset,  $b = 0.69$ , 95% CI = [0.24, 1.14]. More narcissistic people had better prediction of their results,  $b = 0.016$ , 95% CI = [0.003, 0.028], but the accuracy of predictions did not differ based on self-esteem,  $b = 0.009$ , 95% CI = [-0.005, 0.023], or mindset,  $b = -0.013$ , 95% CI = [-0.028, 0.003].



## SUMMARY

- Participants were on average overconfident in their predictions.
- Taking the perspective of others led to higher overconfidence
- Predicting how many others will do better led to higher overconfidence and worse predictions.
- Narcissism, self-esteem, and growth mindset were associated with higher overconfidence.
- Narcissism was associated with better predictions.

## REFERENCES

- [1] Robins, R. W., Hendin, H. M., & Trzesniewski, K. H. (2001). Measuring global self-esteem: Construct validation of a single-item measure and the Rosenberg Self-Esteem Scale. *Personality and Social Psychology Bulletin*, 27, 151-161.
- [2] Konrath, S., Meier, B. P., & Bushman, B. J. (2014). Development and validation of the single item narcissism scale (SINS). *PLoS One*, 9(8), e103469.
- [3] Paunesku, D., Walton, G. M., Romero, C., Smith, E. N., Yeager, D. S., & Dweck, C. S. (2015). Mind-set interventions are a scalable treatment for academic underachievement. *Psychological Science*, 26, 784-793.

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