

# 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*.

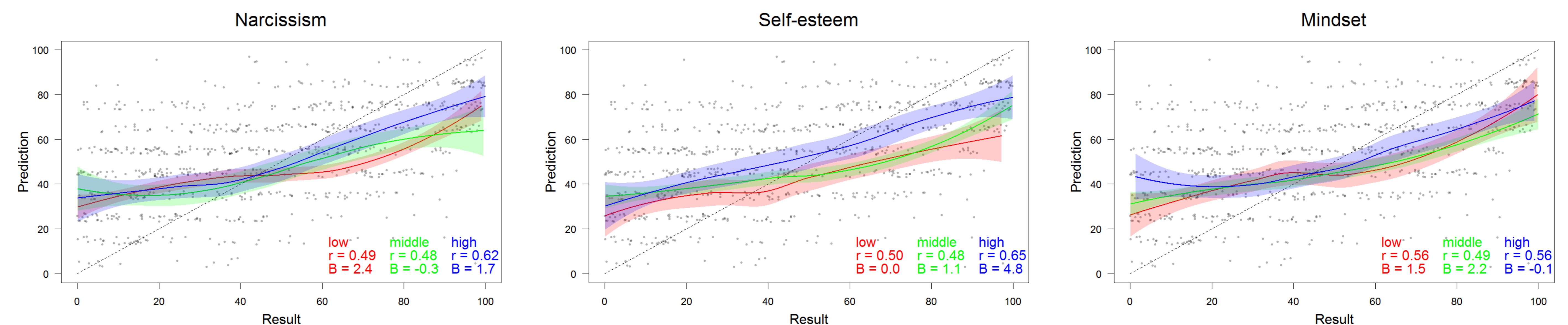
### Personality measures

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.

The study was supported by Internal Grant Agency of Faculty of Business Administration, University of Economics, Prague (IP300040) and by Charles University (PRV00K07 and PRV00K15). We would like to thank Scio company for the data used in the study.