



## IMPROVING COGNITIVE SKILLS FOR ENTREPRENEURIAL PRODUCTIVITY AND GROWTH IN INDONESIA

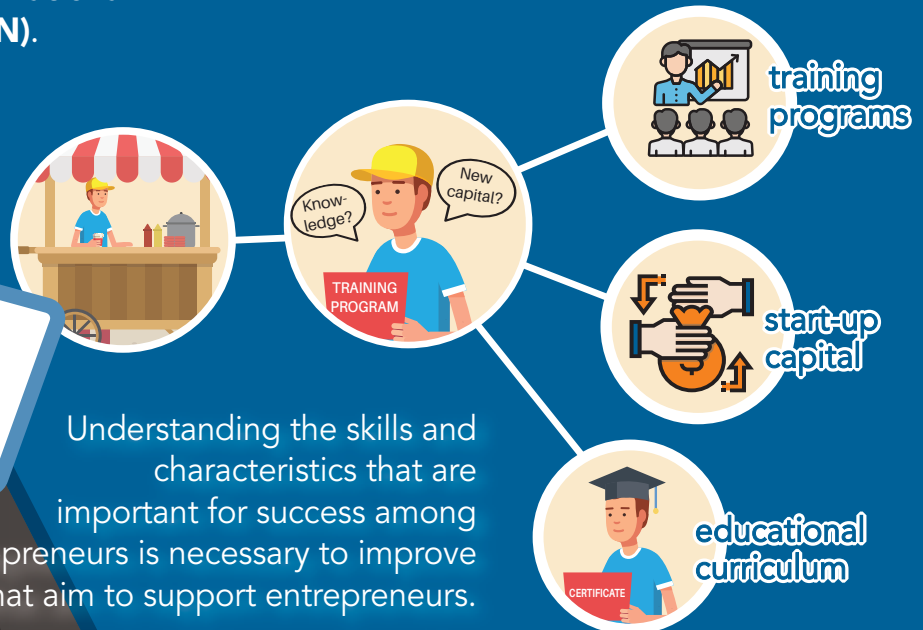
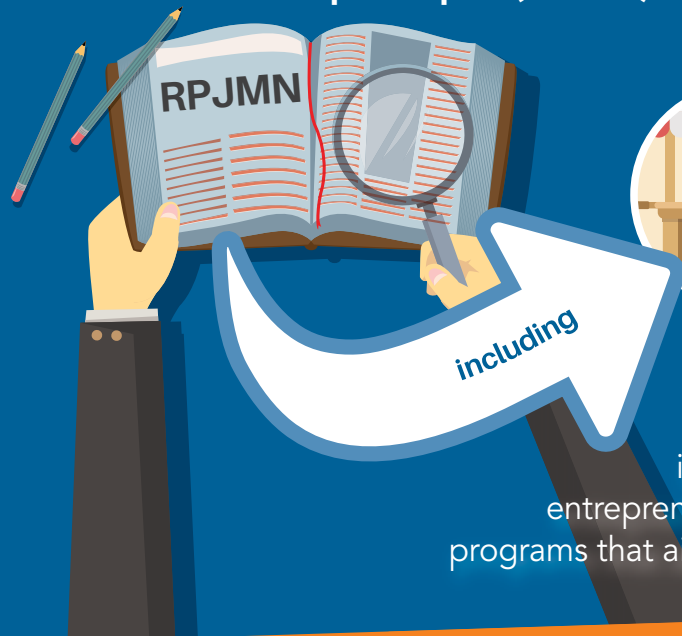
by Niken Kusumawardhani, Daniel Suryadarma, Luca Tiberti, and Veto Tyas Indrio

### BACKGROUND

Indonesia's **60 million** small and medium enterprises (SMEs) contribute



Improving SMEs' competitiveness and productivity is a key element in the government's **national midterm development plan (RPJMN)**.



Understanding the skills and characteristics that are important for success among entrepreneurs is necessary to improve programs that aim to support entrepreneurs.

**RESEARCH OBJECTIVE:** Investigate the returns of two types of cognitive skills (fluid intelligence and crystallized intelligence) of Indonesian nonfarm household entrepreneurs on the performance of their businesses.

### THE ANALYSIS

#### FLUID INTELLIGENCE

- Capacity to think logically and solve problems in novel situations
- Highly influenced by genetics and biological factors
- Measured by Raven's Progressive Matrices test (shape-matching test) from the IFLS\*



#### CRYSTALLIZED INTELLIGENCE

- Ability to use skills, knowledge, and experience
- Acquired through education, experience, and interaction with an environment
- Measured by mathematics test score in IFLS\*



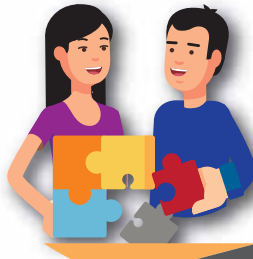
\*Indonesia Family Life Survey 2007 and 2014

# KEY FINDINGS

- A one standard deviation increase in fluid intelligence leads to
  - ↑ **5.7%** increase in profit and
  - ↑ **7%** increase in business value.
- We do not find evidence that crystallized intelligence, once fluid intelligence and education attainment are controlled, has any effect on business performance.
- Increase in crystallized intelligence leads to higher profits only when an entrepreneur is engaged in the sector that is most appropriate given her or his skills.
- We find no evidence of entrepreneurs sorting into sectors based on intelligence or education, presumably due to labor market constraints.

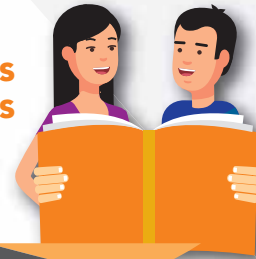
## CONCLUSIONS

FLUID INTELLIGENCE



more useful

CRYSTALLIZED INTELLIGENCE



less advantageous

"Why does fluid intelligence matter more?"



## POLICY MESSAGES

Indonesia needs to invest in improving long-term health outcomes.

in-utero care



environmental conditions



POLICY



policies to reduce existing constraints facing entrepreneurs



skills = sectors

improved skills-sector matching would help increase returns to skills