

**THE EDUCATIONAL AND COGNITIVE
TRANSFORMATION OF SOCIAL
OPPORTUNITY AND INEQUALITY IN THE
U.S.**

CREDENTIALS, COGNITION, “C-STATUS”

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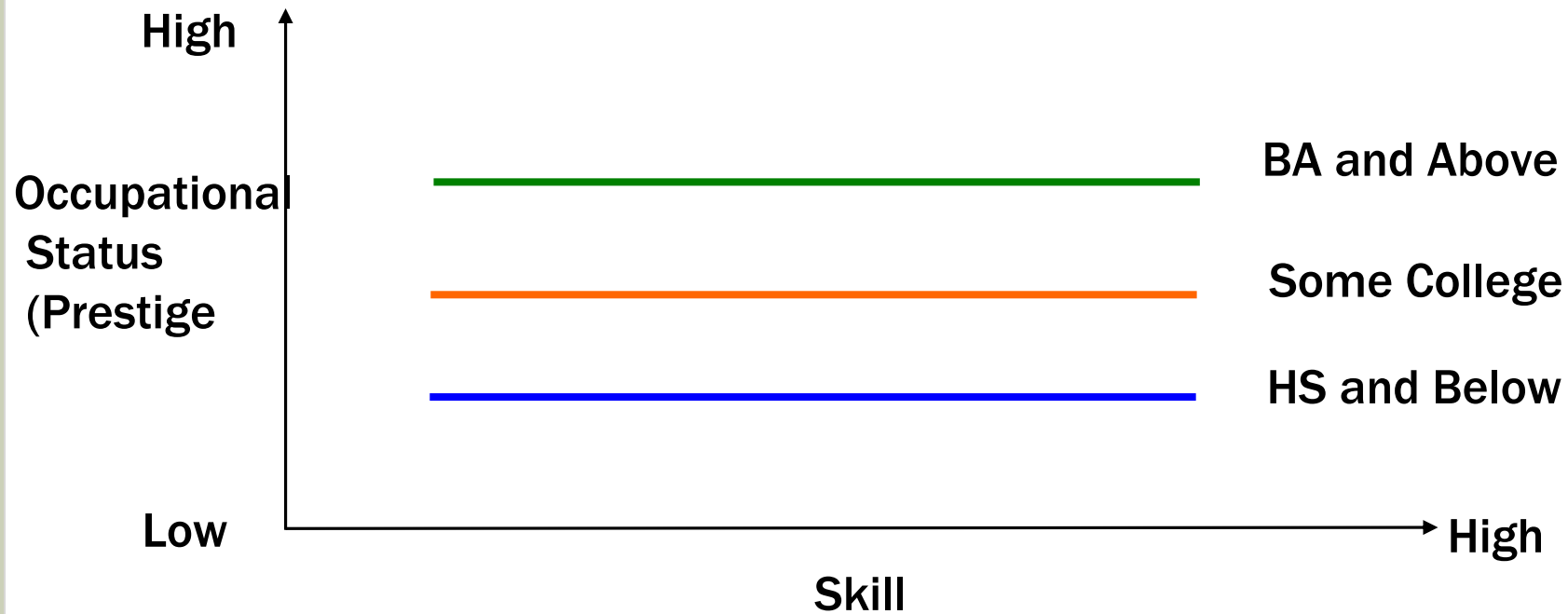
“Credentialism” vs. Technical-functionalist (job dominated)

Usual
Contrasting
Perspectives on:

- Education
- Skill
- Occupational-
Status

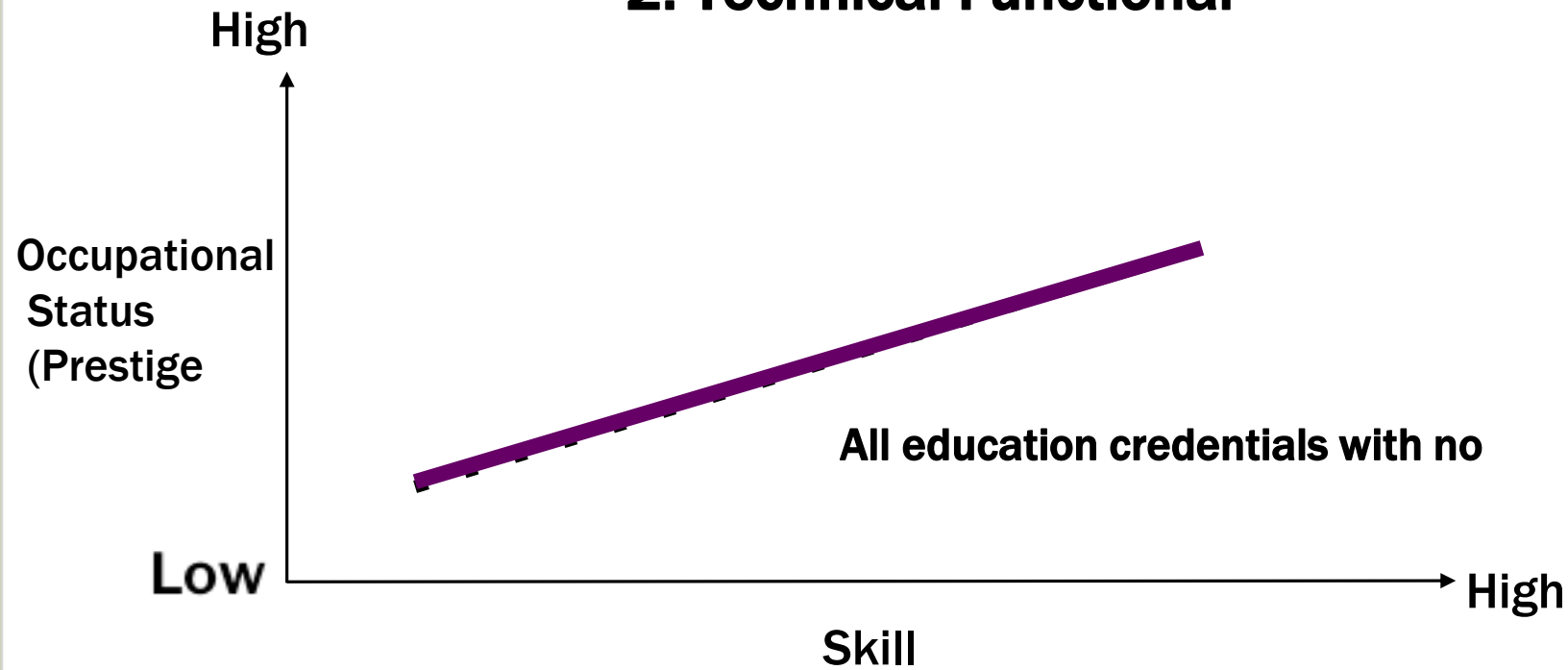
HYPOTHETICAL RELATIONSHIPS AMONG EDUCATION CREDENTIAL, SKILL, AND OCCUPATIONAL STATUS

1. Credentialism



HYPOTHETICAL RELATIONSHIPS AMONG EDUCATION CREDENTIAL, SKILL, AND OCCUPATIONAL STATUS

2. Technical-Functional



EDUCATION CREDENTIAL AND SKILL



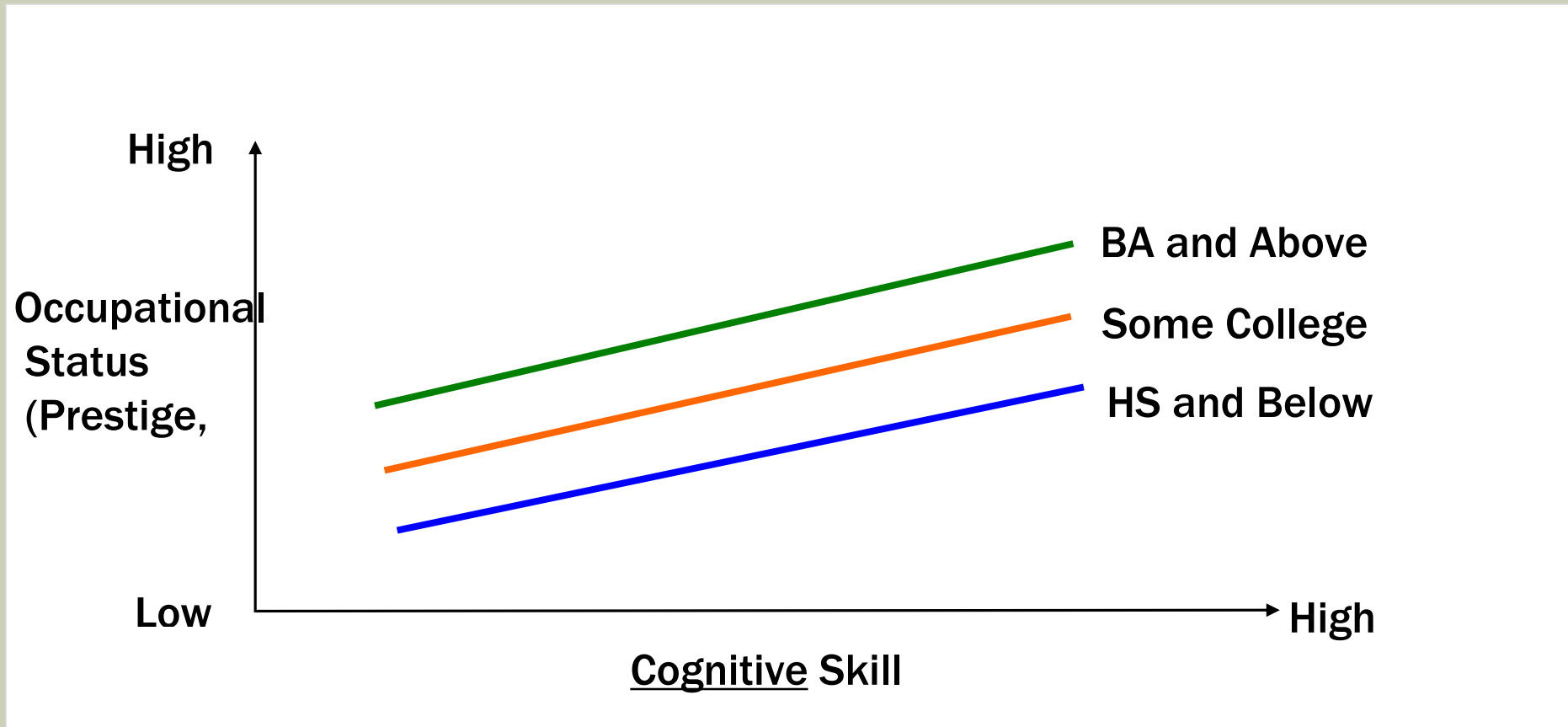
DATA SOURCES

- ❖ **Program for the Assessment of Adult Competencies (PIAAC)**
 - ❖ **U.S. sample of full-time workers (at least 35 hours a week)**
 - ❖ **Workers between 25 and 65 years old**
 - ❖ **N = 1,865**

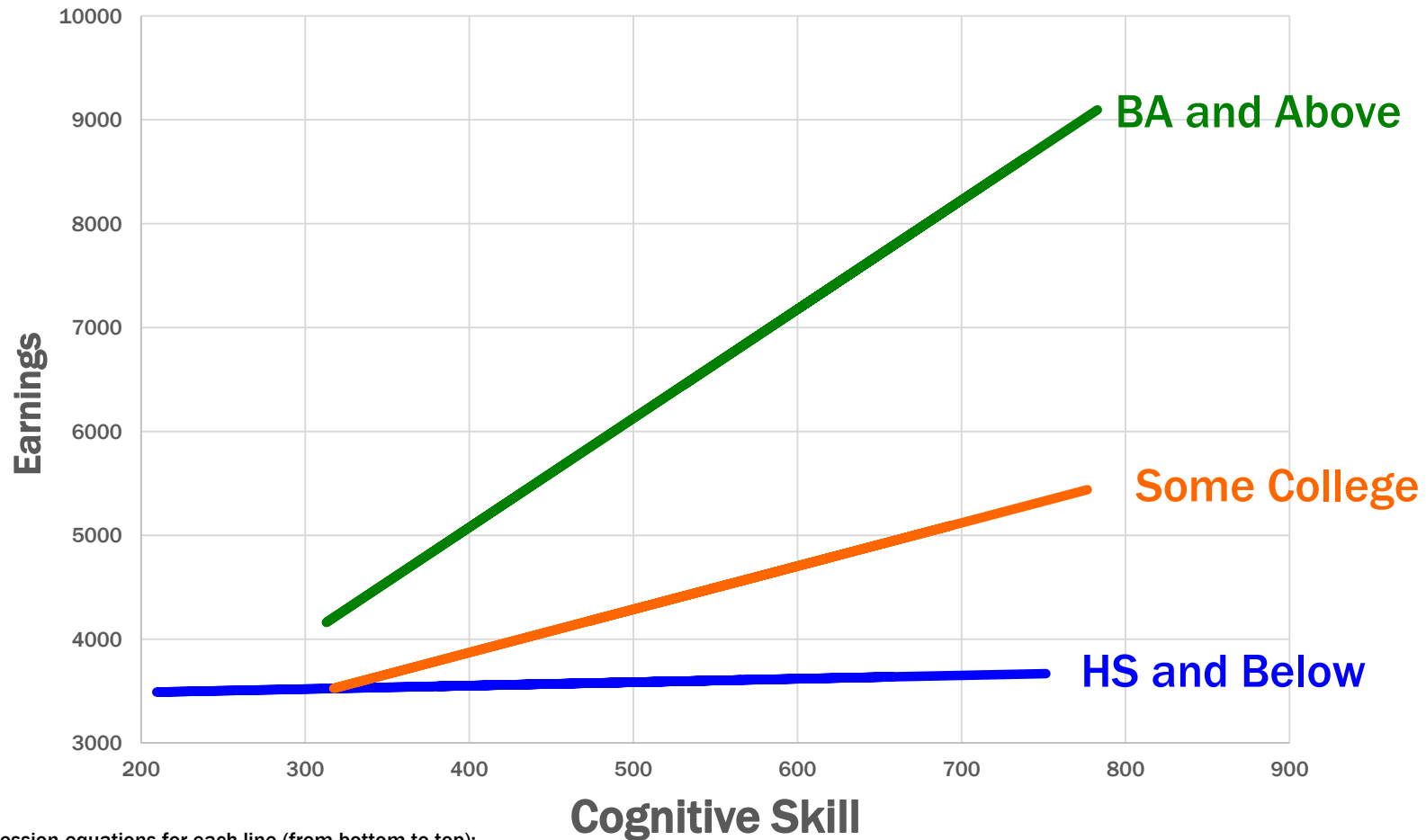
- ❖ **International Stratification and Mobility File**
 - ❖ **Measures of occupational prestige (Converted ISCO)**
 - ❖ **Ganzeboom and Treiman (2011)**

- ❖ **Data analysis strategies: tri-variate; OLS regression; SEM**

H1: EDUCATION CREDENTIAL AND COGNITIVE SKILL ARE ASSOCIATED WITH OCCUPATIONAL STATUS (CONTROLLING FOR OTHER FACTORS)



H1: MONTHLY EARNINGS



*Regression equations for each line (from bottom to top):

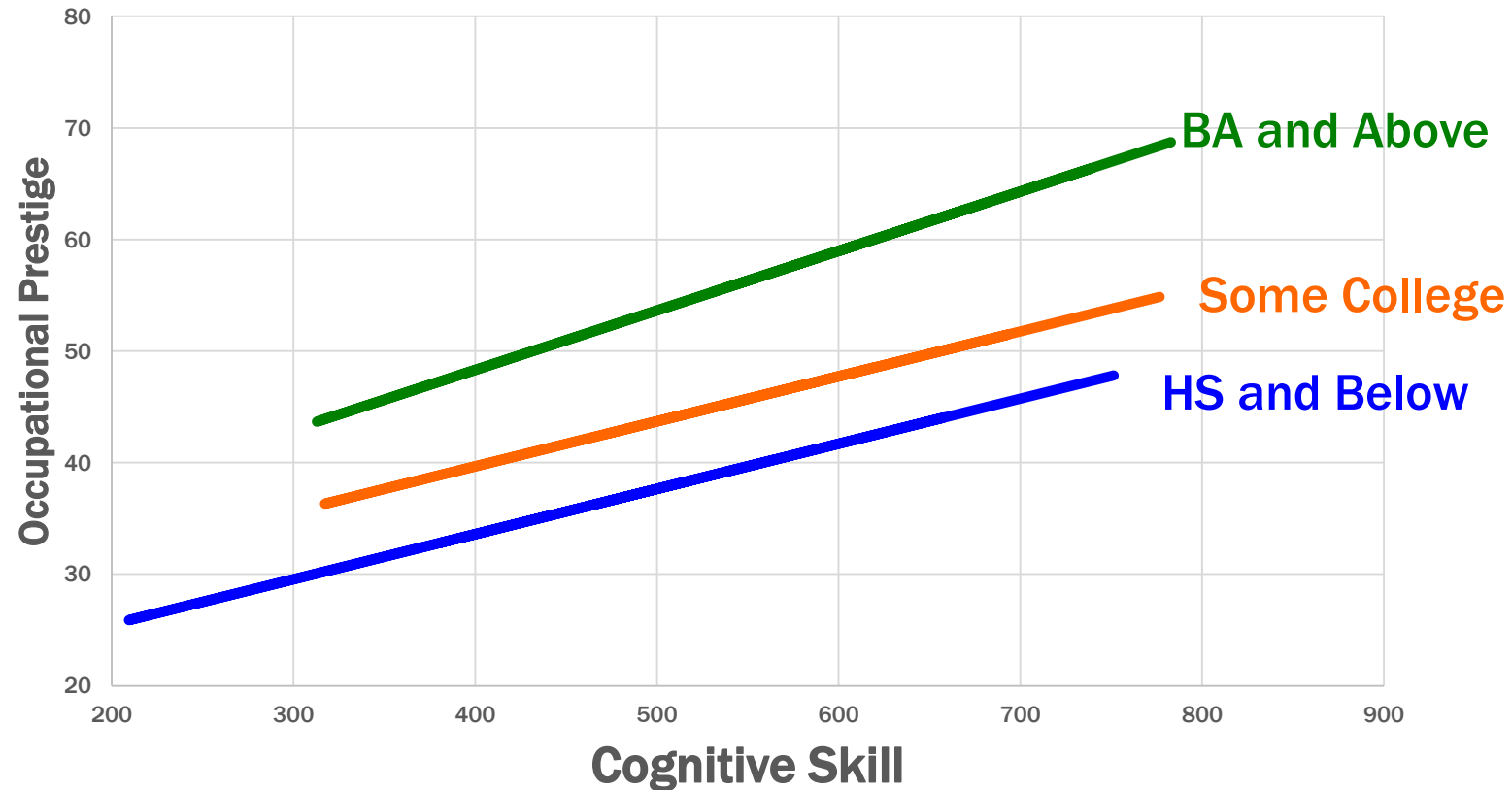
$$y_1=3419.927+0.329x$$

$$y_2=2205.643+4.162x$$

$$y_3=874.029+10.504x$$

y_i is monthly earnings, values in 2012 dollars; x is cognitive skill.

H1: OCCUPATIONAL PRESTIGE



*Regression equations for each line (from bottom to top):

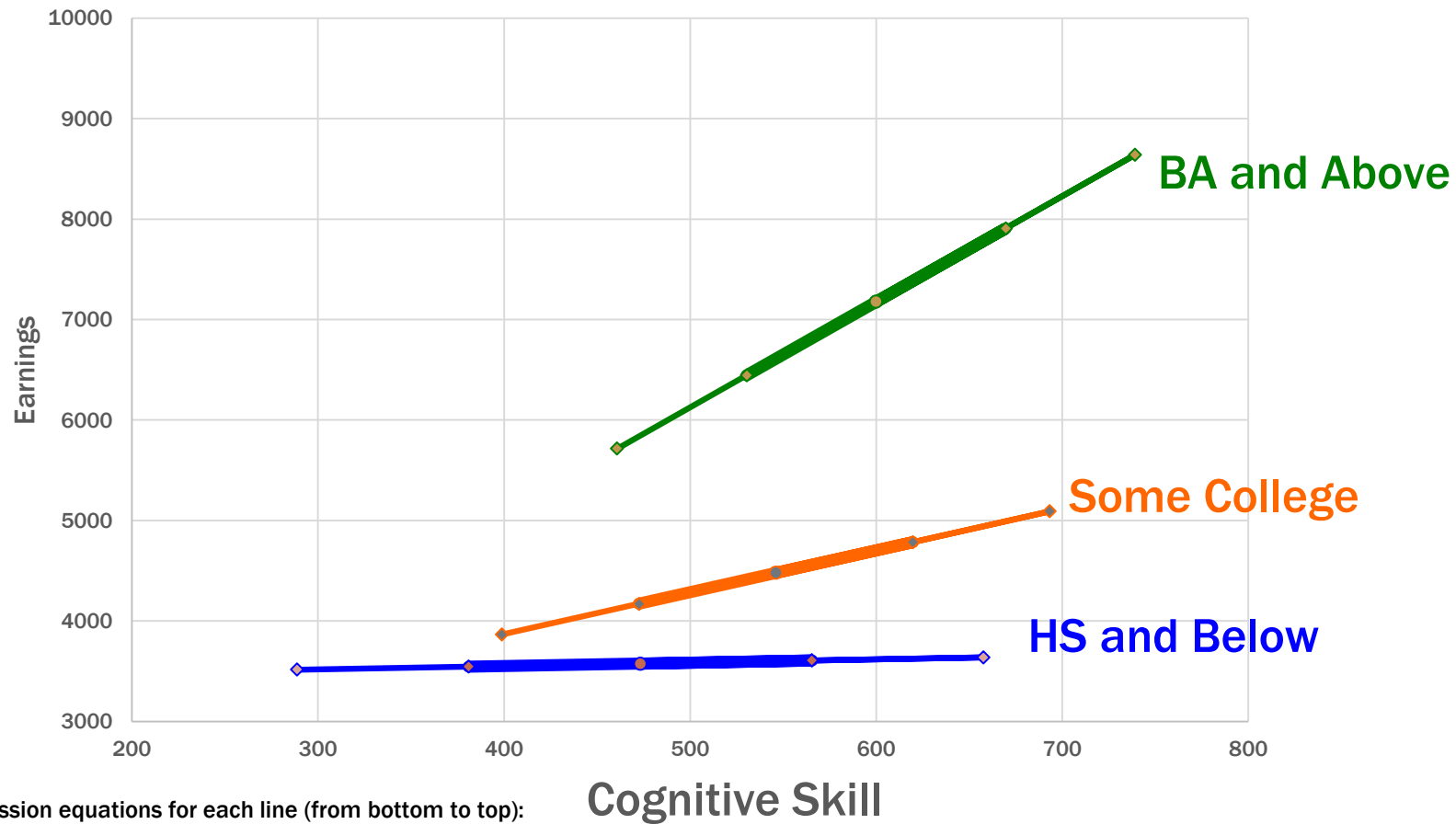
$$y_1 = 17.377 + 0.041x$$

$$y_2 = 23.512 + 0.040x$$

$$y_3 = 26.995 + 0.053x$$

y_i is occupational prestige; x is cognitive skill.

H1: EARNINGS, COG. SKILL DISTRIBUTION



*Regression equations for each line (from bottom to top):

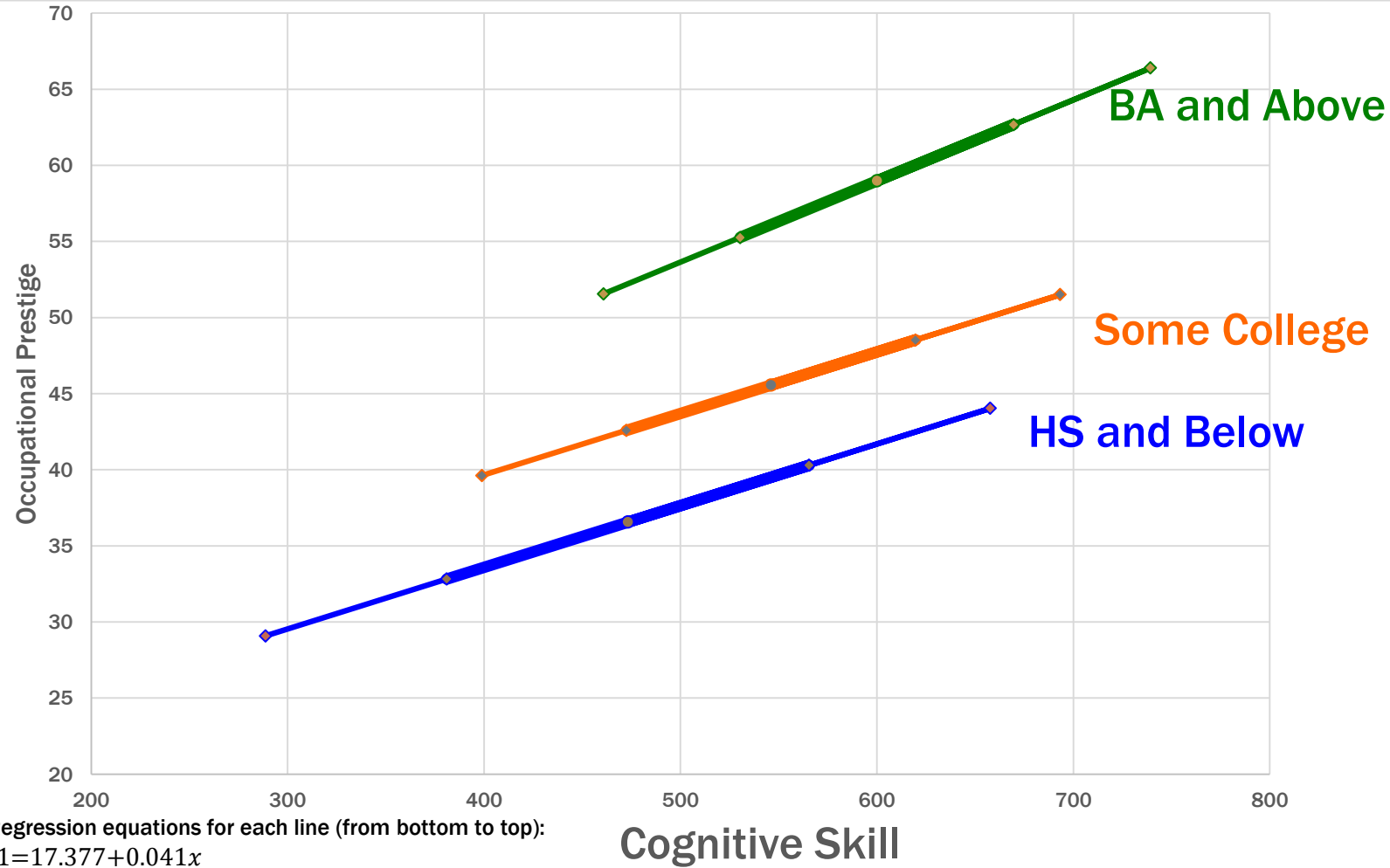
$$y_1 = 3419.927 + 0.329x$$

$$y_2 = 2205.643 + 4.162x$$

$$y_3 = 874.029 + 10.504x$$

y_i is monthly earnings, values in 2012 dollars; x is cognitive skill.

H1: OCC. PRESTIGE, COG. SKILL DISTRIBUTION



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Trends in economy and labor market:

Job qualifications and in-demand skill

**Why? And how
to think about
results.**

- Education
- Skill
- Occupational-
Status

Over 20th Century the education credential replaces many traditional forms of job qualifications:

audition, sinecure, apprenticeship, artisanal training, tutelage, personal letters of reference and introduction, family membership, marital status, age, gender, rectitude, guild or union membership, patronage, ownership, and social stratum

Recent trends in economy and labor market:

Education Credentials

- Increased use of education as job qualification
- Most of occupational structure
- Degree attainment eclipses just years

Contemporary intensification “culture of education” pushes education requirements through

Wide belief
in “holy
trinity” of

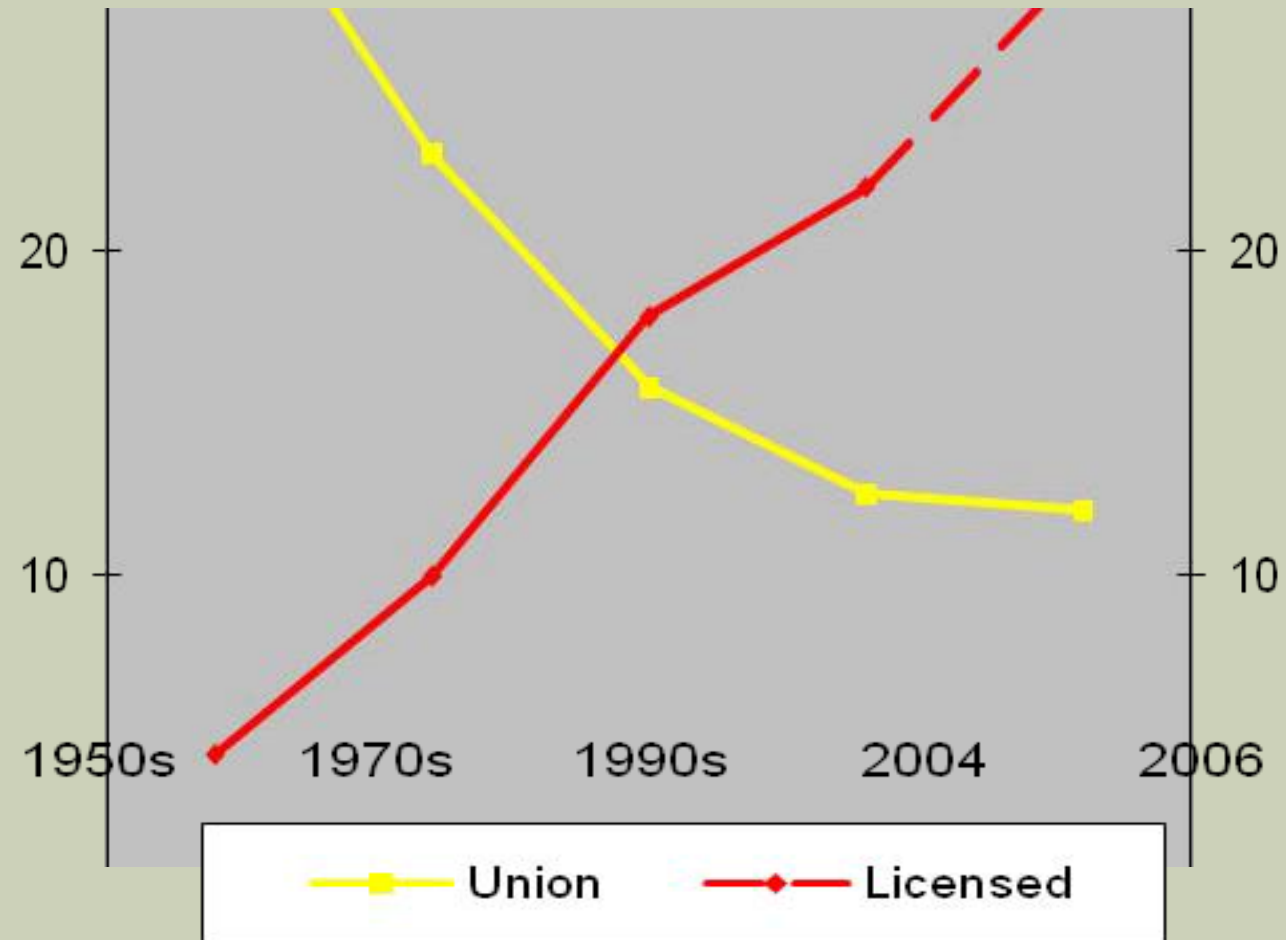
- specialized knowledge
- educational training
- job performance

**Education
Credentials**

- **licensing (29% of total workforce)**
- **legal requirements (state control)**
- **professional association control (2009: 90,908 trade and professional associations)**
- **growing connection between university knowledge production and occupation creation**
- **extensive interactions among all 4**

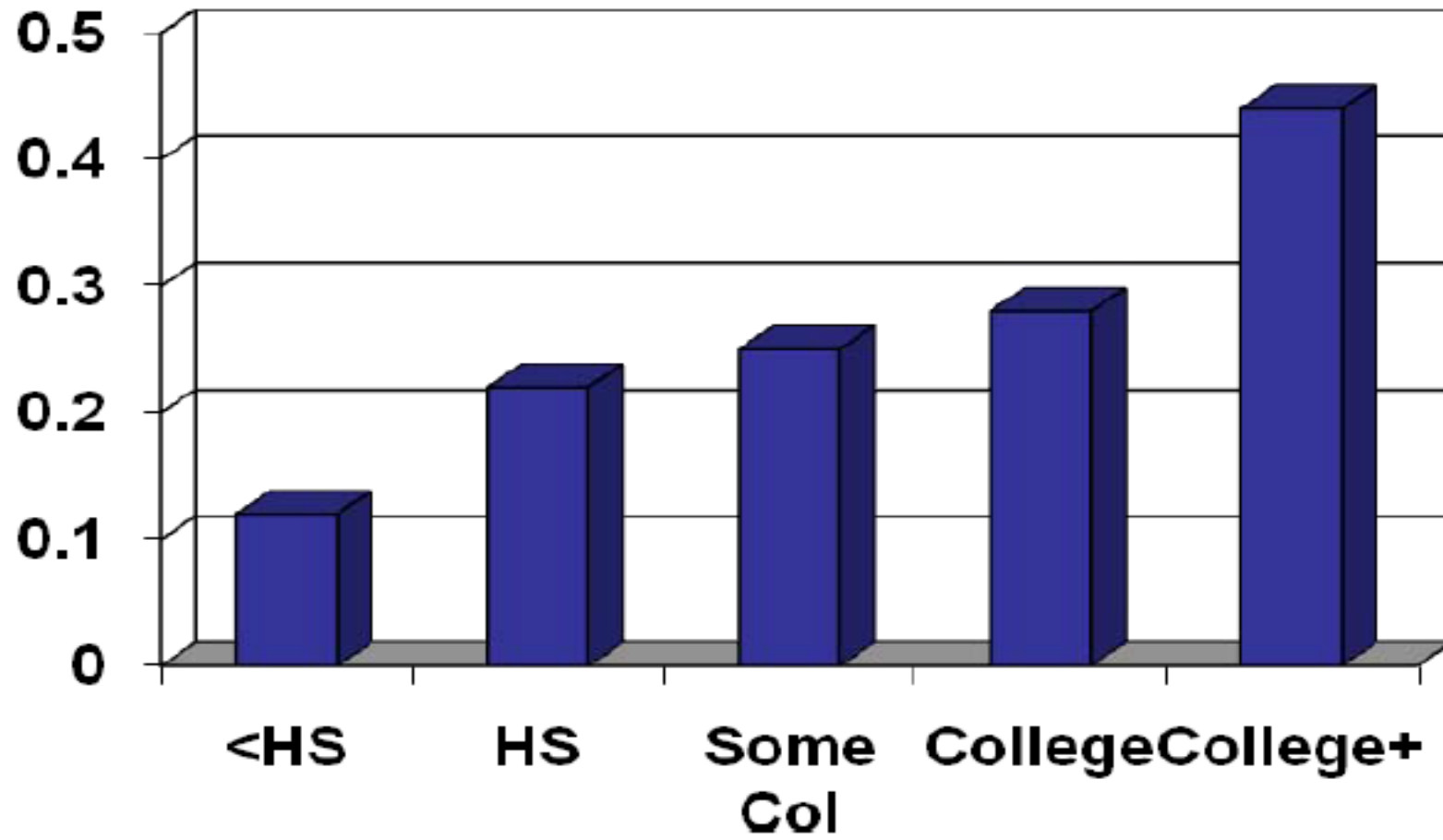
Recent trends in economy and labor market:
Education Credentials

TWO LABOR MARKET INSTITUTIONS: LICENSING AND UNIONIZATION (KLEINER & KRUEGER 2008)



LICENSING BY EDUCATION CREDENTIAL

KLEINER AND KRUEGER 2008



- increased “pervasive skill-biased” technology in the economy
- growing demand for cognitive skills
- cognitively advanced technical capabilities

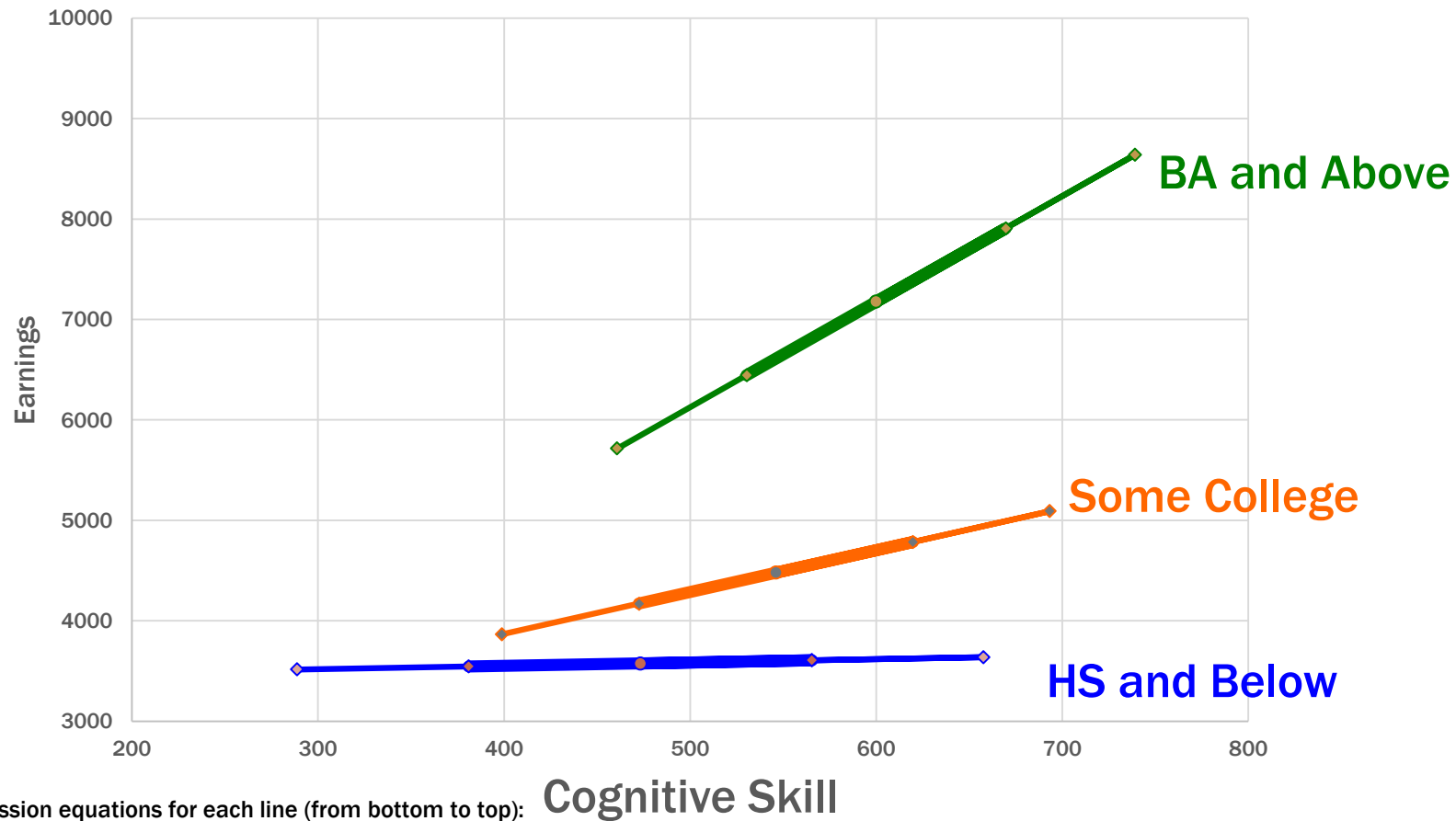
AND

- expanding managerial skills
- professionalized services and workplaces

Recent trends in economy and labor market:

Skill

H1: EARNINGS, COG. SKILL DIS.



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y_i is monthly earnings, values in 2012 dollars; x is cognitive skill.

“C-Status” like SES

Education Credentialing and Cognitive Skills Jointly

Employee C-Status in the U.S. Economy

**Implication
of recent
trends:**

“C-Status”

H2: Education and cognitive skills work in tandem and therefore will have a joint association with occupational status.

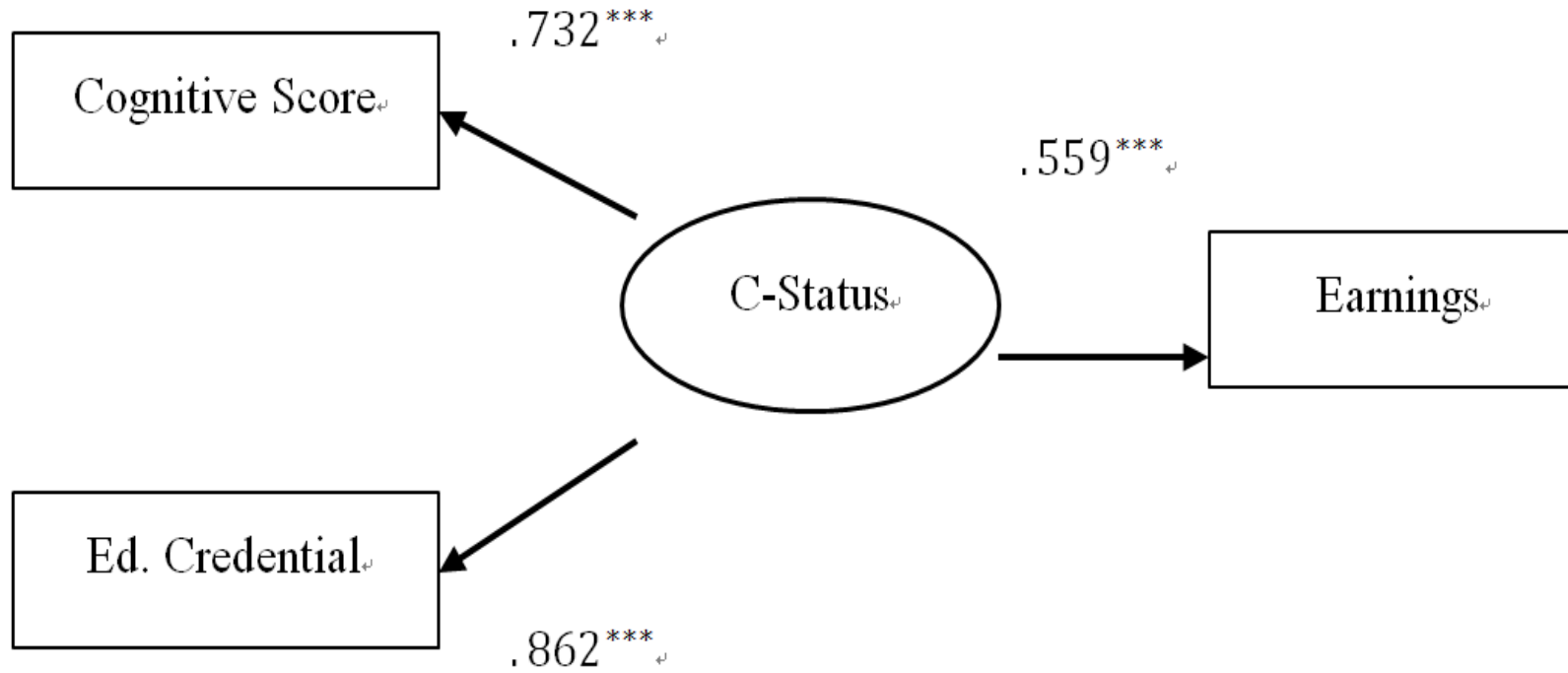
C-Status

CONFIRMATORY FACTOR ANALYSIS (CFA) IN THE SEM MODEL:

- 1) REDUCES MEASUREMENT ERROR BROUGHT TO THE CONSTRUCT FROM ERROR IN EACH INDICATORS;
- 2) FOCUSES ON COMMON VARIANCE AND DECREASES ANY COLLINEARITY, AND;
- 3) CONCEPTUALLY MODELS THE CONSTRUCT AS JOINT FACTOR OF THE INDICATORS.

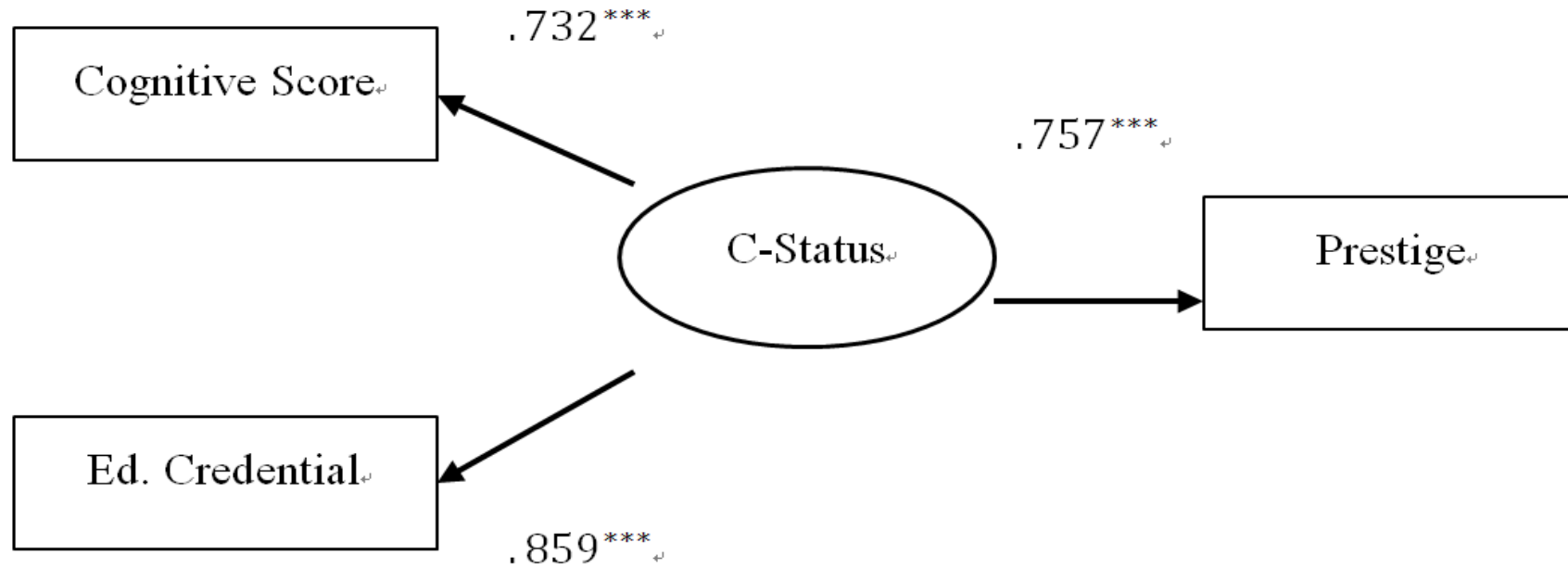
Estimating
C-Status

H2: C-STATUS INFLUENCE ON EARNINGS



Note: the model estimated the association among the above variables while controlling age and gender.

H2: C-STATUS INFLUENCE ON OCC. PRESTIGE



Note: the model estimated the association among the above variables while controlling age and gender.

Education's causal effect on domain- Intelligence:

Educational Expansion 20th Century and the Flynn
effect

Baker et al. *Intelligence* (2015) and *Developmental
Cognitive Neuroscience* (2012)

Why C-Status
makes sense

What one does in school-college is more important than just getting there

“Hout Effect”

Hout. (1988) *American Journal of Sociology*

Why C-Status makes sense

Occ. Prestige often seen as a weak measure of remittance and authority of jobs, but not true:

It is social consensus on occupational control over nature of things and reasoning

i.e. Science, technical, cognitive, abstract job skills

Why is C-Status more associated with occ. Prestige?

H3:

The mean C-status of employees will have a positive gradient with differentiation of the occupation structure

Standard Occupational Classification (SOC)

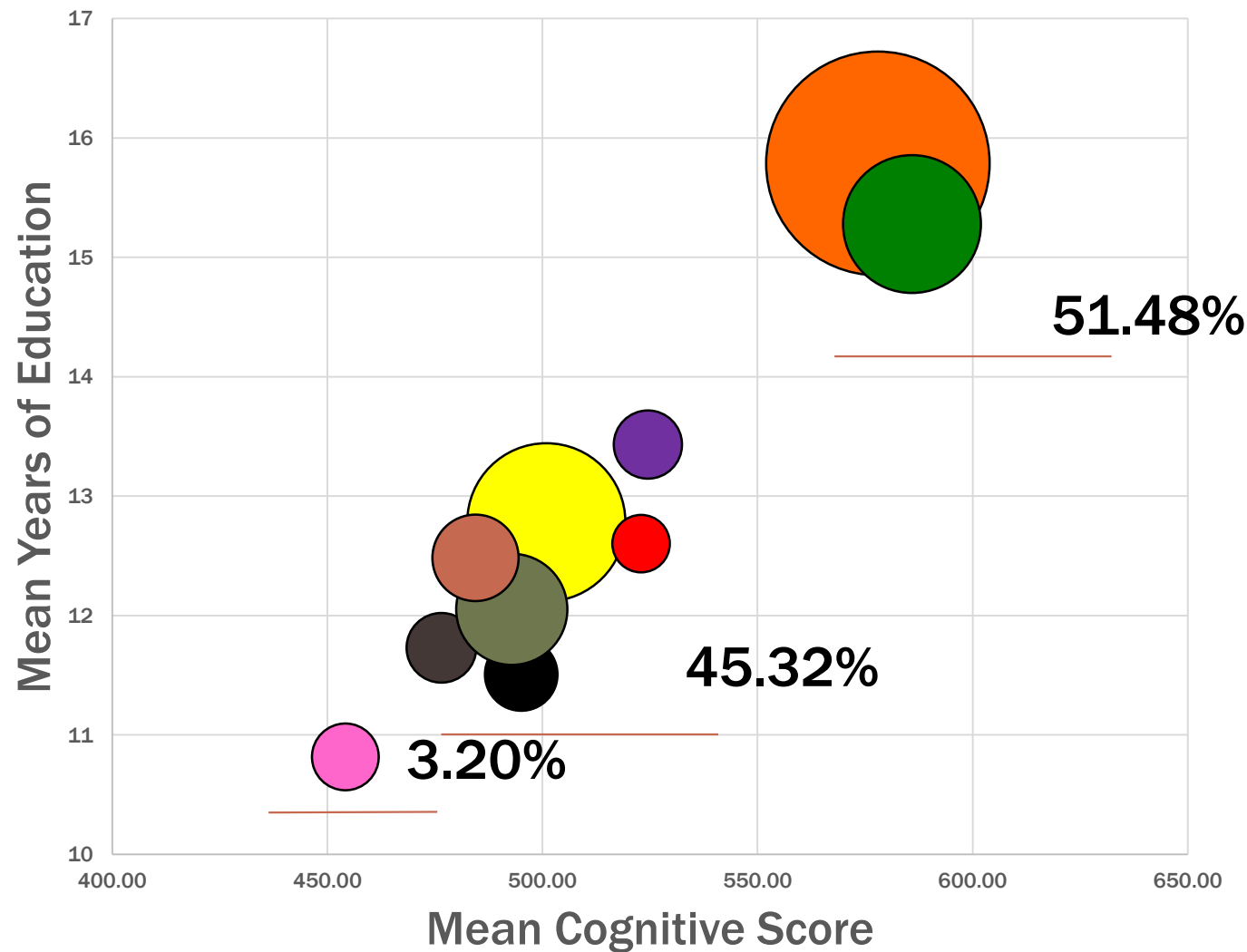
Used to calculate the relative size of the U.S. Labor Force (Converted ISCO)

Bureau of Labor Statistics (2010)

Implications of:

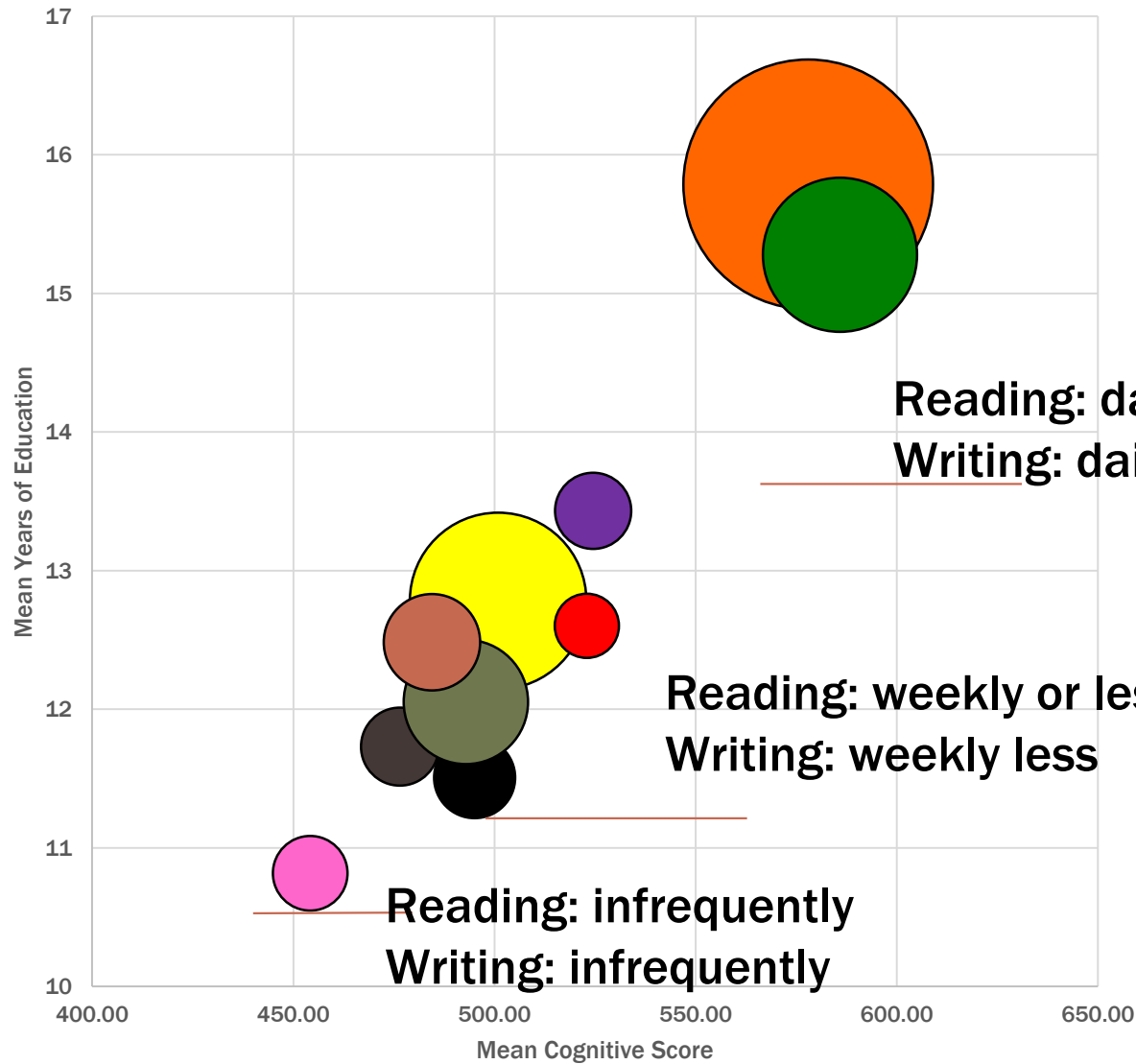
C-Status for
U.S.
Occupational
Structure

% OF JOBS BY OCCUPATION BY C-STATUS



- Professional and related occupations
- Management, Business, and financial operations
- Service occupations
- Sales and related
- Office and administrative support
- Farming, fishing, and forestry
- Construction and extraction
- Installation, maintenance, and repair
- Production
- Transportation and material moving

JOB TASKS BY OCCUPATION BY C-STATUS



- Professional and related occupations
- Management, Business, and financial operations
- Service occupations
- Sales and related
- Office and administrative support
- Farming, fishing, and forestry
- Construction and extraction

- **Workforce education, skill, and economies more dynamically interconnected than traditional theories assume**
- **Fear of over-education crisis should be overcome....it is a pernicious myth (Baker 2014)**
- **Education, a major source of deeper cognitive skill, equal access and school quality must be joint top economic priority**

**Implications
of C-status for
policy:**

**What can
policy-makers
take away?**

- **Traditional vocationalism is dead....”we need to bring it back” is also a pernicious myth**
- **Broad access to post-secondary education is essential for future economy development in U.S.**
- **Ups the ante for lessening of inequality**

**Implications
of C-status for
policy:**

**What can
policy-makers
take away?**

- **Not just training, but knowledge production**
- **U.S. STEM knowledge production is largest in world by significant amount**
- **STEM and other knowledge prod. undergirds economic growth**
- **American universities largest contribution to STEM knowledge and expertise in the world**

**Implications
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