

# Academic Productivity Matters: International Learning and Job Acquisition of Chinese PhD Returnees

Ka Ho Mok<sup>1</sup> and Jin Jiang<sup>2</sup>

<sup>1</sup> Vice President, Lam Man Tsan Chair Professor of Comparative Policy  
<sup>2</sup> Research Assistant Professor, Lingnan University, Hong Kong SAR

## Acknowledgement:

The study is part of a larger research project funded by the ESRC in the UK. Professor Ka Ho Mok, is the international research team leader of this project. The authors thank the Peking University research team (Prof. Chen Hongjie as PI) for sharing the data presented in the article.

Paper presented in Centre for Global Higher Education (CGHE) Webinar,  
7 July 2020

# Research Question

- **The growing pressure of globalization and intensified competition for global talent & the Chinese government's investment in human capital:**
  - ✓ Sending students abroad to pursue higher degrees through national scholarship programs & requiring them to return China

- **Research question**

How the **international learning experience** affects **job acquisition** of **Chinese PhD returnees** in the academia?

- ✓ what factors of the PhD returnees' international learning experience contribute to their employment in a top university.
- ✓ government-funded Chinese PhD returnees

# Research Background

## Importance of talents and policy context

- **The Chinese regime's shift**

labor-intensive industries → internationally competitive private and state-owned enterprises.

- ✓ become an “Industrial Superpower” by 2049.
- ✓ “Made in China 2025” strategy

- **Require a strong labor force** with appropriate knowledge, adaptive skills, and relevant experiences.

- **Government: nurture, attract, retain talents and professionals** to transform its manufacturing-based economy to a knowledge-based economy (Jiang, 2018; Mok and Jiang, 2018; Klingler-Vidra and Mok, 2018).

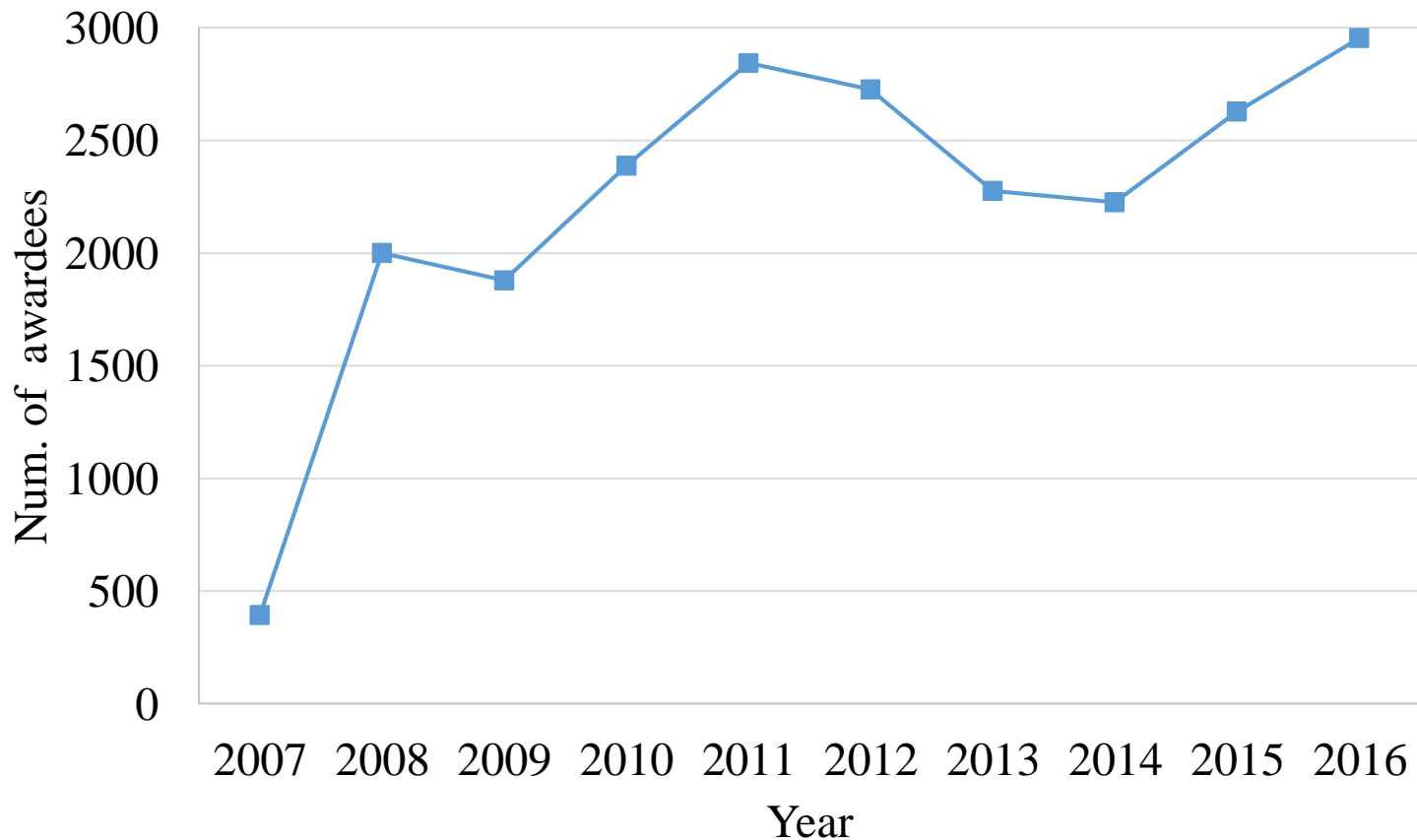
## Research Background

# National Response to the Global War of Talents

### The China Scholarship Council (CSC) Program:

- Funds individuals to study abroad for a doctoral degree.
- the awardees are required to return to China after their graduation.
- Since 2007, the CSC has annually sponsored students for overseas PhD study, and 19,359 individuals have been awarded funding as of 2017

## Figure Number of CSC program awardees for overseas PhD study, 2007–2016



Data source: China Scholarship Council.

## Research Background: International Ph.D. degree holders & their job acquisition

Returned PhD graduates generally have **better outcome** in job acquisition in academia

- ✓ no serious difficulties in job seeking (Zweig and Han, 2010);
- ✓ more optimistic about their future career development (Harman, 2003);
- ✓ having an advantage in the academic labor market (Jung, 2018);
- ✓ enjoy a higher status than their peers (Rizvi, 2000);
- ✓ better academic and innovative performances Lu & Zhang, 2015).

# Research Background: International Ph.D. degree holders & their job acquisition

- **Challenges** for Chinese PhD returnees to secure a satisfactory academic position.
  - ✓ **lack domestic social network** resources, which is considered an importance resource in work acquisition and career development in China (Bian, 1994).
  - ✓ **intensified competition** in the academic labor market.
- Yet, little is known about recent Ph.D. returnee's learning experience and their job acquisition.
- It is of great policy implication.
  - ✓ Highly selected, government-funded Chinese PhD returnees

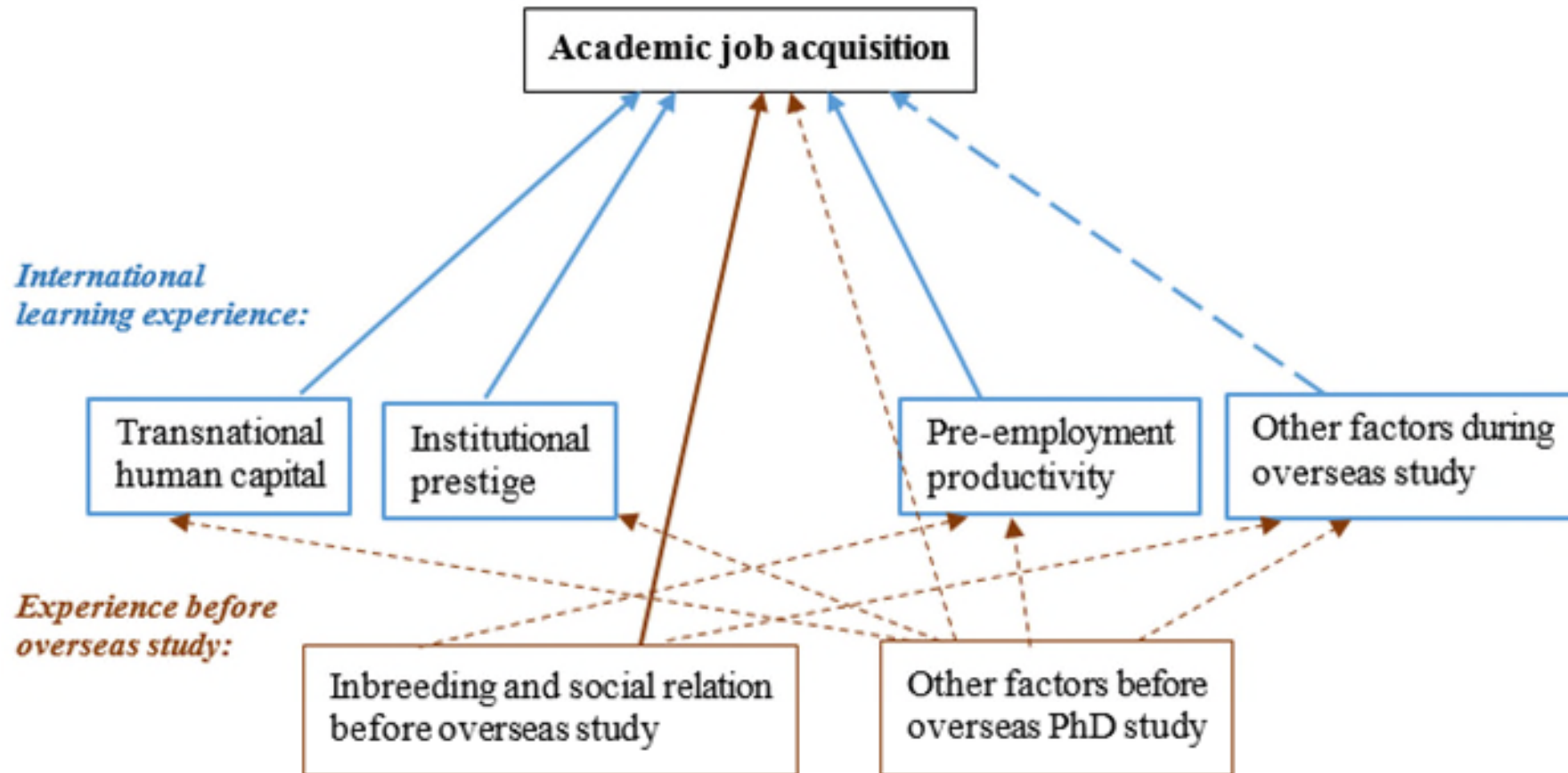
# Research Gaps

- Few study *systematically analyze* the international learning experience of PhD degree holder on their job acquisition
  - ✓ estimated the return of international doctoral students from the macro level, or analyzed the career plan (Harman, 2003).
- Studies about Chinese returnees did **not distinguish** between *the level of education* (Welch & Hao, 2013), or **focus on the level of master's degree** (Hao, Wen & Welch, 2016; Mok, et al., 2018), few studies focus on doctoral level (See Chen 2015 for exception).
- Most of the studies about international Ph.D. students and returnees are *qualitative*, or quantitative studies based on *small samples* (e.g., Ugwu, 2014; Harman, 2003).
- **Measures of academic productivity:**
  - ✓ based on self-reported data in surveys (e.g., Baruffaldi and Landoni, 2012; Shin et al., 2014).
  - ✓ inaccurate due to exaggeration, under-reporting, or bad memory from the respondents.
  - ✓ self-reported publications may not have a high quality in terms of scholarship.
- **It remains unclear what factors of the PhD returnees' international learning experience contribute to their academic job acquisition.**



# Literature Review: Theoretical Framework

Figure Multiple Channels for International Education and Job Acquisition



# Literature Review

- **Transnational human capital**
- Overseas students' experience of studying abroad and their **accumulated knowledge and ability** comprise transnational human capital (Gerhards et al., 2017; Woolley et al., 2008).
- Such capital enables them to gain advantages in returning to work.

# Literature Review

## Institutional prestige

- a **strong positive correlation** between the prestige of the department of scientists' doctoral study and the prestige of the university department where they work (Caplow and McGee, 1958; Crane, 1965; Hargens and Hagstrom, 1967).
- **Selection effect**
  - ✓ elite individuals are selective to the PhD program, and the prestige of the PhD program reflects their cumulative advantages.
- **The institutional effect**
  - ✓ the impacts of the institution of the PhD program, such as good faculty quality (e.g., Keith and Babchuk, 1998), positive peer effects, and better motivation (Headworth and Freese, 2016); Morrison et al., 2011).
  - ✓ these prestige effects could lead to better publication achievements and awards during doctoral study and can help improve academic job placement.

# Literature Review

## Institutional prestige

### The institutional effect

- Mediated by **academic productivity**
  - ✓ the effect of PhD prestige on job placement operates indirectly through the mediation of academic productivity (Headworth and Freese 2016)
- **Pure prestige**

the institutional prestige of doctoral study on the first academic position **is independently** significant of pre-employment productivity (Long et al., 1979; Baldi, 1995).

  - ✓ this is called the “*affiliated honor, institutional pedigree*” (Oprisko, et al., 2013) or “**pure prestige**” phenomenon (Headworth and Freese, 2015).
  - ✓ the hiring department anticipated that having a PhD graduate from a highly-ranked department has positive implications for the hiring department’s own **prestige** (Burris 2004).

# Literature Review

## Inbreeding and social relations

- **Social ties** are important in selection of candidates in academic departments (Caplow and McGee, 1958:110).
- Overseas doctoral degree holders usually have weak domestic scholarly networks
  - ✓ the problem of inbreeding in Portugalhas: overseas doctoral degrees holder faced disadvantages (Delicado, 2011)
  - ✓ in Korea: maintaining scholarly relationships with Korea while studying overseas could enable the interviewees to secure a faculty position upon their return (Lee and Kim 2010).

# Literature Review

## Pre-employment academic productivity

### Mixed evidence on the effect of academic productivity:

- Insignificant effect:
  - ✓ pre-employment productivity has an insignificant effect on the prestige of scientists' first position in the academia (Long et al., 1979)
- Significant effect:
  - ✓ on access duration to permanent jobs in the academic sector of France (Bonnal and Giret (2010).
  - ✓ in the placement in research-oriented, tenure-track academic sociology jobs, and that achievement mediates PhD prestige and job placement (Headworth and Freese (2015)
  - ✓ with higher academic productivity during their doctoral studies are more likely to work in the academic sector than in enterprises (Shen et al, 2018).

# Research Methods

## ■ Data:

- **National Survey** on Government-funded Postgraduate Program in 2014 (collaborative project between China Scholarship Council (CSC) and Peking University)
- **Scopus Data** on the number of international publications of the respondents





# Research Methods

## ■ Dependent variables

Job outcomes: Whether working in a top university (Projects 985/211 Universities)

- *Project 985* is a national project to promote the development of Chinese top universities to become world-class universities in the 21<sup>st</sup> century. This project assigns large funding support to 39 universities.
- *Project 211* is the project initiated by MOE to develop approximate 100 national key universities in the 21<sup>st</sup> century.

## ■ Models

- **Logistic regression models** for analyzing the factors contributing to returnees' employment in a top university or their home university.



# Descriptive statistics

Note: *Project 985* is a national project to promote the development of Chinese top universities to become world-class universities in the 21<sup>st</sup> century. This project assigns large funding support to 39 universities. *Project 211* is the project initiated by MOE to develop approximate 100 national key universities in the 21<sup>st</sup> century.

Source: National Survey on Government funded Postgraduate Program

**Table 1: Descriptive statistics of the variables used in this study (N = 441)**

Variable	Mean	Std. Dev.	Min	Max
Employment in a top university (ref. = non-Project-211 university)	0.485	0.500	0	1
Return to home university (ref. = did not return)	0.224	0.418	0	1
Gender (ref. = female)	0.592	0.492	0	1
Age	30.447	2.255	24	42
Marital status (ref. = single)	0.558	0.497	0	1
Undergraduate in a top university (ref. = non-Project-211 university)	0.741	0.438	0	1
<i>Host country of PhD study</i>				
Asia Pacific countries (ref. group)	0.306	0.461	0	1
Germany	0.181	0.386	0	1
France	0.179	0.384	0	1
The UK	0.102	0.303	0	1
Other European countries	0.152	0.359	0	1
The US and Canada	0.079	0.271	0	1
English-speaking country (ref. = non-English-speaking country)	0.274	0.447	0	1
<i>PhD discipline</i>				
Science stream (ref. group)	0.839	0.368	0	1
Social sciences	0.102	0.303	0	1
Arts and humanities	0.059	0.236	0	1
Ranking of the host university (ref. = non-top 100 in the world)	0.243	0.429	0	1
Supervisor's rank (ref. = non-full professor)	0.832	0.374	0	1
<i>International publication during doctoral study</i>				
No publication (ref. group)	0.261	0.440	0	1
1-4 publications	0.506	0.501	0	1
4-9 publications	0.161	0.368	0	1
10 publications or above	0.073	0.260	0	1

Note: Science stream majors include science, engineering, agronomy, and medicine.

# Models of working in a top university

## Research findings

- Transnational human capital
  - Prestige effects of university (✗)
  - Pre-employment productivity (☑?)
  - Inbreeding effect (☑?)
- ✓ around 95% of the home university that overseas PhD degree holders chose to return to are top universities in China.

**Table 2:** Logistic regression models of working in a top university ( $N = 441$ )

	(1)	(2)	(3)	(4)	(5)	(6)
Gender (ref. = female)	0.068 (0.199)	0.134 (0.209)	0.128 (0.210)	0.103 (0.214)	-0.010 (0.243)	-0.039 (0.247)
Age	1.147+ (0.609)	1.389* (0.652)	1.351* (0.652)	1.318* (0.660)	1.097 (0.721)	1.118 (0.725)
Age square	-0.016+ (0.009)	-0.020* (0.010)	-0.020+ (0.010)	-0.019+ (0.010)	-0.016 (0.011)	-0.016 (0.011)
Marital status (ref. = single)	0.497* (0.204)	0.436* (0.211)	0.442* (0.212)	0.337 (0.219)	0.441+ (0.246)	0.344 (0.255)
Undergraduate in a top university (ref. = non-Project-211)	0.400+ (0.225)	0.363 (0.231)	0.377 (0.232)	0.355 (0.235)	0.260 (0.267)	0.225 (0.271)
<i>Host country of PhD study (ref. = Asia Pacific countries)</i>						
Germany		-0.324 (0.314)	-0.335 (0.317)	-0.391 (0.323)	-0.563 (0.365)	-0.604 (0.371)
France		-0.778* (0.322)	-0.783* (0.323)	-0.795* (0.329)	-0.682+ (0.357)	-0.692+ (0.364)
The UK		0.238 (0.473)	0.160 (0.478)	0.022 (0.487)	0.348 (0.598)	0.268 (0.604)
Other European countries		-0.263 (0.319)	-0.232 (0.322)	-0.332 (0.329)	-0.436 (0.377)	-0.539 (0.383)
The US and Canada		-0.109 (0.495)	-0.159 (0.498)	-0.273 (0.504)	0.322 (0.606)	0.245 (0.610)
English-speaking country (ref. = non-English-speaking)		-0.408 (0.384)	-0.278 (0.403)	-0.259 (0.406)	-0.693 (0.499)	-0.681 (0.503)
<i>PhD discipline (ref. = Science stream)</i>						
Arts and humanities		1.150* (0.493)	1.173* (0.491)	1.351** (0.511)	1.504** (0.528)	1.570** (0.549)
Social sciences		-0.148 (0.352)	-0.166 (0.353)	0.001 (0.364)	-0.159 (0.412)	-0.061 (0.427)
Ranking of the host university (ref. = non-top 100)			-0.056 (0.237)	-0.055 (0.239)	-0.009 (0.278)	-0.024 (0.279)
Supervisor's rank (ref. = non-full professor)			0.320 (0.291)	0.211 (0.295)	0.324 (0.348)	0.244 (0.353)
<i>International publication during doctoral study (ref. = no publication)</i>						
1-4 publications				0.049 (0.260)		-0.080 (0.300)
4-9 publications				0.660+ (0.342)		0.358 (0.398)
10 publications or above				1.286** (0.470)		0.994+ (0.527)
Return to home university (ref. = did not return)					3.848*** (0.532)	3.800*** (0.533)
Constant	-20.249* (9.737)	-23.732* (10.439)	-23.391* (10.434)	-23.074* (10.556)	-19.454+ (11.543)	-19.821+ (11.601)

Standard errors in parentheses. \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ , +  $p < 0.1$ .

Note: Standard errors in parentheses

\*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ , +  $p < 0.1$

## Models of working in a top university and returning to the home university

### Research findings:

- The importance of pre-employment academic productivity (Y)
- Prestige effects of university (X)

Note: The sample of Model 2 is restricted to those who did not return to their home university.

Standard errors in parentheses. \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ , +  $p < 0.1$ .

**Table 3:** Logistic regression models of working in a top university and returning to the home university

	Returning to the home university (1)	Employment in a top university (but not home university) (2)
Gender (ref. = female)	0.285 (0.255)	-0.038 (0.254)
Age	1.331 (0.868)	0.926 (0.749)
Age square	-0.019 (0.014)	-0.013 (0.012)
Marital status (ref. = single)	0.242 (0.263)	0.310 (0.262)
Undergraduate in a top university (ref. = non-Project-211)	0.414 (0.293)	0.152 (0.278)
<i>Host country of PhD study (ref. = Asia Pacific countries)</i>		
Germany	0.202 (0.365)	-0.738+ (0.384)
France	-0.661 (0.443)	-0.608+ (0.366)
The UK	-0.165 (0.534)	0.230 (0.634)
Other European countries	0.187 (0.373)	-0.662+ (0.397)
The US and Canada	-0.894 (0.607)	0.202 (0.635)
English-speaking country (ref. = non-English-speaking)	0.526 (0.462)	-0.724 (0.527)
<i>PhD discipline (ref. = Science stream)</i>		
Arts and humanities	0.152 (0.580)	1.534** (0.551)
Social sciences	0.099 (0.434)	0.057 (0.437)
Ranking of the host university (ref. = non-top 100)	-0.082 (0.283)	0.078 (0.287)
Supervisor's rank (ref. = non-full professor)	-0.021 (0.347)	0.219 (0.365)
<i>International publication during doctoral study (ref. = no publication)</i>		
1-4 publications	0.287 (0.332)	0.023 (0.310)
4-9 publications	0.901* (0.395)	0.504 (0.412)
10 publications or above	1.141* (0.490)	1.080* (0.542)
Constant	-24.720+ (13.881)	-17.265 (11.962)
Observations	441	342

Note: The sample of Model 2 is restricted to those who did not return to their home university. Standard errors in parentheses. \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ , +  $p < 0.1$ .

# Recap of the main findings on International learning experience and academic job acquisition

**No significant “pure prestige” effect** of returnees’ doctoral university independent of individual merits.

- ✓ Ranking of university is not significant

## ● **Pre-employment academic productivity matters**

plays an important role in determining PhD returnees’ job placement in a top university in China.

- ✓ larger number of publication (i.e., 4–9 publications or 10 and above publications) vs. without any publications
- ✓ academic productivity positively predicts the likelihood that PhD graduates return to their home universities (where they earn their bachelor or master degree).

# Discussion

- **Positive strategies for nation building**
  - ✓ state investments in grooming talents with global and international outlooks, relevant knowledge, and skill sets for the highly competitive environment.
- **Widened the gap between the “haves” and “have nots”.**
  - ✓ fail to enjoy such “state investments” of generous scholarships feel discriminated and disadvantaged.
  - ✓ question the value of international learning, criticizing how international learning favors the elites and the advantaged groups
- **Higher education is now confronting national/global disequilibria**
  - ✓ handle such local–global tensions carefully
  - ✓ similar traps that the Western counterparts confront in the context of rising nationalism against globalization.
- **Limitation: non-random sample (441 cases)**
  - ✓ Respondents may be selective (more productive, more satisfied with their job outcomes)
  - ✓ However, the first survey about the Chinese government-funded PhD returnees (receiving scholarship from China Scholarship Council).

# Recent Publications on Careers development of international graduates in East Asia

## Journal publications in 2020

1. Riding over the National and Global Disequilibria: International Learning and Academic Career Development of Chinese Ph. D. Returnees. *Higher Education Policy*, 1-24.
2. Critical Reflections on Mainland China and Taiwan Overseas Returnees' Job Searches and Career Development Experiences in the Rising Trend of Anti-globalisation. *Higher Education Policy*, 1-24.
3. The quest for global talent for changing economic needs: A study of student mobility and job prospects for returnees in China. *Globalisation, Societies and Education*, 18(1), 79-96.

## Journal publications in 2018

1. Does internationalisation of higher education still matter? Critical reflections on student learning, graduate employment and faculty development in Asia. *Higher Education Quarterly*, 72(3), 183-193.
2. International and transnational education for whose interests? A study on the career development of Chinese students. *Higher Education Quarterly*, 72(3), 208-223.

## Working in progress

- A book to report the analysis of the present research project

# Thank you

*All comments and suggestions are more  
than welcome*