外国人教員・研究者の役割と貢献に関する国際比較研究

A Comparative Study in the Roles and Contributions of International Faculty and Researchers in Japan

（課題番号 19H01640）

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平成 31 年度～令和 5 年度文部科学省科学研究費基盤研究（B）（一般）

研究成果中間報告書

Mid-Term Report of Grant-in-Aid for Scientific Research (B) 2019-2023

令和 4 年 3 月

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はじめに

本中間報告書は平成 29 年度から令和 3 年度にかけて行われた科学研究費「外国人教員・研究者の役割と貢献に関する国際比較研究」による研究成果をまとめたものである。

知識基盤社会の進展に伴い、高度人材を確保する必要性が増大している。例えば、OECD(経済協力開発機構)が、2001 年 6 月に Seminar on International Mobility of Highly Skilled Workers をテーマとする会議をパリで開催し、その会議において、21 世紀における国際的な人材の移動問題と行動を取り上げ、その成果が、2002 年に報告書「International Mobility of the Highly Skilled」として公表された。日本においても、中央教育審議会が平成 12 年度に「グローバル化時代に求められる高等教育のあり方について」(答申) を公表し、その中で、グローバル化の進展を受け、優秀な外国人教員と研究者の積極的採用を進め、日本の大学や企業のさらなる国際化を図る必要性が謳われた。また第 5 期科学技術基本計画においても、「優れた外国人研究者を受け入れ、活躍を促進していくことは、国際的な研究ネットワークを一層強化するとともに、多様な視点や発想に基づく知識や価値を創出する観点から重要である」と強調されている。

これらを踏まえて、本研究は、諸外国・地域における外国人大学教員・研究者の役割と貢献を国際比較の観点から明らかにすることを通して、日本における外国人大学教員・研究者の役割と貢献を解明し、今後の改革方策に一定の知見を提示することを目的とする。具体的には、①アメリカ、欧州、オーストラリア、アジア諸国・地域における外国人大学教員・研究者の役割と貢献を分析し、主に外国人教員・研究者を雇用する機関や団体の関係者、行政および行政機関関係者、そして一部の外国人大学教員・研究者を対象にインタビューを行うこと通じて複数のケーススタディを行う。②海外の比較研究成果を参考に、アンケート調査とインタビュー、そしてケーススタディに基づいて、日本における外国人大学教員・研究者の役割と貢献を明らかにしたうえで、今後外国人大学教員・研究者受け入れと活躍を推進すべき方向性及び改革方策を示唆する。

本研究では、以下の４点の研究課題の核心をなす学術的「問い」を考えている。第一に、ポスドクを含む外国人大学教員・研究者が所属する学部・学科、そして大学全体や研究機関、企業にもたらす外国人大学教員・研究者の役割、特に最大の貢献はどのようなものなのか？具体的には、彼らによる日本の大学教育活動、研究活動、国際的ネットワークの構築、日本全体の国際的競争力の向上への役割と貢献がどのようなものがあるか？第二に、国際比較研究と実証的研究に基づいて、今後どのような外国人大学教員・研究者を採用すべきか？第三に、彼らの役割と貢献をどのようにすれば効果を最大化できるか？最後に、非英語圏諸国において、どのような制度を策定し、優秀な外国人大学教員・研究者の採用と活躍が促進できるか？

これらのリサーチクエスチョンを応えるために、本研究では、近年の外国人大学教員・研究者の役割と貢献に関する学説と先行研究を整理しつつ、アメリカ、イギリス、オランダ、オーストラリア、中国、韓国、シンガポールにおける外国人大学教員・研究者の役割と貢献、その特徴及び類型に関する比較的研究を行う。本研究は、海外の代表的な大学へのインタビュー、そして共通項目を設定した質問紙調査とインタビューによる国内の実態調査を通して、日本の外国人大学教員・研究者、公的研究機関・非営利団体・企業等に所属する外国人研究者（ポスドクも含む）がもたらす役割と貢献を解明し、戦略的な提言を行うことを目指すものである。

以上の目的を達成するため、本研究は、海外協力研究者と共同で、関連諸国・地域における行政および行政機関関係者、外国人大学教員・研究者が所属する大学の管理者と同僚を対象に、主に共通の調査票に基づく面接調査を実施する。これらの比較的研究に関する知見を参考に、アンケート調査と聞き取り調査に基づいて、日本における外国人大学教員・研究者（ポスドクも含む）の役割と貢献に関する特性を解明する。

具体的にはまず、先行研究の検討を通して国際的人材の移動や大学教授職、研究者の国際化に関する理論を整理し、世界的動向をマッピングする。その上で、日本との比較の上で有効で、かつ、外国人大学教員・研究者の採用と活躍が盛んに進められている国として、アメリカ、イギリス、オランダ、オーストラリア、中国、韓国、シンガポール、香港を対象に、各国・地域の外国人大学教員・研究者の役割と貢献の実態を考察する。これらの大学の事例を取り上げ、外国人大学教員・研究者の役割と貢献の効果と課題、当該国の国際的研究と教育の通用性の向上と国際的競争力の向上との関係に焦点をあてて、日本の大学にとって参考になる点について比較研究を行う

令和４年３月

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研究経費 Grant-in-Aid for Scientific Research

2021 年度：4,810 千円（直接経費：　3,700 千円, 間接経費：1,110 千円）
2020 年度：3,640 千円（直接経費：　2,800 千円, 間接経費：　840 千円）
2019 年度：3,120 千円（直接経費：　2,400 千円, 間接経費：　720 千円）
合計：　　14,950 千円（直接経費：11,500 千円, 間接経費：3,450 千円）

研究成果 Research Outcomes

Oral presentation at scholarly conferences and international conferences

1. Huang, F. (2019). How Chinese and American Faculty Differ in Their Motivations and Work Roles at Japanese Universities? In Symposium on *Internationalization and Quality Management in Higher Education* on 26 February, organized by Lingnan University, Hong Kong.
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5. Huang, F. (2019). Internationalization of Japan's Higher Education: Changes and Challe nges. In *the 20th China Annual Conference for International Education & Expo* on 17 October, Organized by China Education Association for International Exchange in China National Convention Center, Beijing, China.
6. 黄福涛(2019)「中国研究型大学的国际教师-基于问卷调查与访谈结果的发现」第二十届中国国际教育年会《国际化与学生流动•中外合作办学•新聚合研讨会》、10月17日、北京国家会议中心。
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10. Huang, F., Miyoshi, N., & Li, M. (2021). International Researchers and Scientists outside University in Japan, in *the 7th. HERA Special Program Event Book* on 27 May.
11. Lilan Chen and Futao Huang (2021), How do international faculty at Japanese universities view their integration? In Centre for the Global Higher Education, UCL, University College of London, the UK on 24 June.
12. Huang, F. (2021). Socio-Cultural Adjustment of International Faculty Member in Japan's Research Universities. In *Academic Conference, GHEF 2021, Malaysia* on 28 July.
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14. Huang, F. (2021). International Faculty at 12 Chinese Universities: A survey study. In CHER 33rd. Annual Conference on *Promoting Closer Relations and Scholarly Dialogues between European and Asian Higher Education Research*, on 3 September.
15. 白川展之(2021)「」「中国の科学技術力；国際比較と特徴」特定非営利活動法人２１世紀構想研究会オンライン・シンポジウム『日中科学技術協力は進めることができるのか』、9 月 9 日。
16. 黄福涛、大膳司、三好登（2021）「日本の公的研究所における外国人研究者の雇用と役割に関する研究」日本教育社会学会第 73 回年次研究大会、9 月 12 日。
17. 白川展之（2021）「経済安全保障上、今後重要となる技術とは」公益財団法人中曽根康弘世界平和研究所経済安全保障研究会第５回　11 月 16 日

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Book chapter

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6. 黄福涛(2020)「第 1 章 オーストラリアの研究型大学における外国人教員―インタビュー調査を中心に―」黄福涛・大膳司　編『外国人教員に関する国際比較研究』高等教育研究叢書 154, 広島大学高等教育研究開発センター。1-10 頁。
7. 黄福涛(2020)「第 2 章 中国の大学における外国人大学教員―インタビュー調査を中心に―」黄福涛・大膳司　編『外国人教員に関する国際比較研究』高等教育研究叢書 154, 広島大学高等教育研究開発センター。11-24 頁。
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21. Yonezawa, A. & Huang, F. (2021). "Chapter 7 World-Class University Policies and Rankings in Transition: A Comparative Study of the People's Republic of China and Japan", in Nian Cai Liu, Yan Wu and Qi Wang (Eds.). *World-Class Universities.* Brill Sense. pp. 140-153.

Essay and commentary

1. Huang F. (2019) Changing attitudes towards university teaching and research. *University World News* (13 April).
2. Huang, F. (2019). China belts up for the road to internationalisation. *Times Higher Education* (11 June)
3. Huang F. (2019) Doctoral Education needs reform to compete internationally. *University World News* (6 July).
4. 董 冕雄, 白川 展之, 大場 豪 (2019)「ナイスステップな研究者から見た変化の新潮流 室蘭工業大学 大学院工学研究科情報電子工学系専攻 董冕雄教授インタビュー : 中国から 13 歳で来日し、会津大学で博士号を取得後夫婦で研究室を運営し、防災・減災のための情報技術開発を手がけるまで」『STI horizon = STI ホライズン : イノベーションの新地平を拓く』 5(3):秋東京 : 文部科学省科学技術学術政策研究所科学技術動向研究センター、p. 9-13。
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6. Huang, F. (2020). "What does the future hold for Hong Kong's universities?" *University World News* (June 9)
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8. 黄福涛「日本加强审查海外留学生和学者，影响几何」『中国科技報』(China Science Daily) 2020 年 8 月 19 日第 4 版。
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2.
3. Futao Huang's comments are cited in HE leaders question Japan's ban on returning of foreigners by Joyce Lau, *Times Higher Education* on 24 July 2020.
4. Nobuyuki Shirakawa's comments are cited in Japan considers tougher rules on research interference amid US-China tensions by Smriti Mallapaty, *Nature NEWS* on 4 August 2020.
5. Futao Huang's comments are cited in Japan considers tougher rules on research interference amid US-China tensions by Smriti Mallapaty, *Nature NEWS* on 4 August 2020.
6. Futao Huang's comments are cited in China's five-year plan focused on scientific self-reliance by Smriti Mallapaty, *Nature NEWS* on 11 March 2021.
7. Futao Huang's comments are cited in Chinese researchers now largest overseas cohort in Japan by Joyce Lau, *Times Higher Education* on 1 June 2021.
8. Futao Huang's comments are cited in Killing at Chinese university highlighs tensions over tenure system by Smriti Mallapaty, *Nature NWES* on 25 June 2021.
9. Futao Huang's comments are cited in Asia internationalizes in its own backyard by Joyce Lau, *Times Higher Education* on 25 August 2021.
10. 沖村 憲樹、白川 展之、倉澤 治雄、杉田 定大、侯 召民、永野 博（2021）21 世紀構想研究会オンラインシンポジウム『日中パラダイムシフトの時代　科学技術協力をどう進めるのか』『朝日新聞東京』B16 面、2021 年 9 月 30 日。
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オンライン公開研究会

テーマ: 日本の理工系研究所における外国人研究者の特徴、役割と直面している課題

The characteristics of international researchers, their motivation to work in Japan's research institutes of science and technology, work roles, and challenges they face

2021 年 3 月 3 日 15:00～16:00

使用言語：日本語

司会・進行：大膳　司

講演者：黄　福涛・三好　登

趣旨（概要）：本報告では、公開された外国人研究者関連情報と彼ら・彼女らを対象に実施したインタビュー調査結果に基づいて、日本を代表する三つの理工系国立研究開発法人研究所における外国人研究員の特徴、彼ら・彼女らの来日動機、役割、直面する課題などを分析することを目的としている。具体的には、以下のリサーチクエスチョンを論じる。1. ポスドクを含む外国人研究者が所属する大学以外の研究機関における外国人研究者の役割、特に最大の貢献はどのようなものなのか？2. 彼ら・彼女らがその研究機関や日本での生活を通じていかなる課題に直面しているか？3. 今後どのような制度や仕組み等を策定し、優秀な外国人研究員の採用と活躍が促進できるか？これらの報告を通じて、今後の日本における理工系研究所における外国人研究者の受け入れと活躍を推進すべき方向性および改革方策について、参加者も交えながら検討を試みていきたいと考えている。

テーマ：日本の理工系研究所における外国人研究者の雇用目的・方法と活用
The objectives and methods of recruiting international researchers, and utilization of them in Japan's research institutes of science and technology
2021 年 3 月 10 日 15：00～16：00
使用言語：日本語
司会・進行：米澤　彰純
講演者：大膳　司・白川　展之
趣旨（概要）：公的理工系研究所で先端の科学研究を先導している日本人研究者は、自身の研究室にどのような方法で外国人研究者を雇用しているのか、その外国人研究者に何を期待しているのか、外国人研究者を有効に活用するためにどのような工夫をしているのか、などをインタビュー成果に基づいて報告する。これらの報告に基づいて、公開研究会参加者と、外国人研究者の有効な雇用・使用方法に関する情報共有を行いたい。

テーマ：日本の人文系研究所における外国人研究者に関する調査―外国人の特性がフルに生かされているのか
Findings from interviews with international researchers in research institutes of humanities and social sciences
2021 年 3 月 17 日 15：00～16：00
使用言語：日本語
司会・進行：白川　展之
講演者：李　敏
趣旨（概要）：共通用語が英語である理工系の研究者と異なり、日本における人文系の外国人研究者は、研究対象地域の言語を自由に操り、且つ該当地域の社会文化に精通することが大きく評価されるポイントとなっている。人文系の外国人研究者がいかに日本の研究機関に採用され、いかに研究を実施し、さらにどのような悩みを抱えているのかについて、アジア経済研究所の事例研究を通して明らかにする。

テーマ：外国人教員・研究者に関する国際比較的研究－韓国、日本と中国の事例を中心に－
A comparative study of international faculty members and researchers in Korea, Japan and China
2021 年 3 月 24 日 15：00～16：30
Working language: English
司会・進行：三好　登
講演者：Presentation1 Yangson Kim, Inyoung Song
Presentation 2 Lilan Chen
Presentation 3 Futao Huang

Presentation 1 Policy initiatives and challenges relating to international researchers and faculty members in Korea

Yangson Kim (Hiroshima University) and Inyoung Song (Korean Council for University Education)

The study aims to overview policies (projects) for international faculty members and researchers in universities and beyond enforced by the central government in Korea by reviewing the current status. The Korean government has implemented policies to encourage universities and research institutes to hire international faculties and researchers to enhance their global competitiveness. However, previous studies on international researchers in Korea have been conducted mainly on international faculty members in individual universities. Moreover, although tremendous efforts have been made to recruit international faculty and researcher to work in Korea, many of them have left Korea because of the limited support system and closed academic culture in Korean society. Therefore, it is meaningful to explore the challenges and limitations of the policies for international faculty members and researchers with overall social and economic contexts in Korea. In particular, universities and research institutes have different organizational cultures, and the expected roles for international researchers seem to be different, too. Hence, it is significant to analyze the academic activities and experiences of international researchers in universities and research institutes in more detail. Further, the policies of World Class University by the Ministry of Education, Korea Research Fellowship by the Korea Research Foundation, and Brain Pool by the Ministry of Science Information and Technology are also discussed, focused on their achievements and challenges they face.

Presentation 2 Identifying the key issues of international faculty at Japanese universities: A qualitative approach

Lilan Chen (Doctoral candidate at the RIHE)

This study is devoted to identifying the key issues of international faculty at Japanese universities via a qualitative approach. Semi-structured interviews with 40 international faculty hired in Japanese universities with various backgrounds were applied. Key issues from various facets ranging at international, national, social, institutional, and individual levels have been identified explicitly. Furthermore, this study investigates the variations among these issues according to the demographic attributes of the participants by indicating that the issues distributed in the open dimensions were considered consistent with all international faculty, whereas, the issues noted in the closed dimensions are bound to be diverse depending on the participant individuals. Theoretical and practical implications drawn from the key findings are offered to better tackle the tokenization of international faculty and improve the comprehensive internationalization of Japanese higher education in practice.

Presentation 3 International faculty at Chinese universities

Futao Huang (RIHE)

This presentation is mainly concerned with the analysis of the basic characteristics of international faculty, their motivation to work in China, and their expected roles in their current universities based on both quantitative and qualitative methods. It first presents key characteristics of international faculty in 12 Chinese universities. It then discusses main results from a survey of international faculty in these 12 Chinese universities. The study argues their characteristics and work roles from a comparative perspective.

オンライン国際ワークショップ

Online International Workshop
International Academics in a Global and Comparative Perspective: Their characteristics, work roles and contributions
国際比較的視点からみた外国人教員・研究者−彼ら/彼女らの特徴、役割と貢献−

Working language
English

Free Registration
https://rihe.hiroshima-u.ac.jp/en/2022/01/feb-6-2022/

Since the 1990s, international academics, including faculty members at higher education institutions, and scientists at research institutes and private industry and business has become an increasingly important part of the global academic environment. A growing expansion and diversification of international mobility of academics has occurred not only in most OECD countries (OECD, 2008), but also in Latin America, parts of Africa, and many Asian countries systems (Huang & Welch, 2021). Hence, compared to the era before the 1980s, not only have the numbers of international academics rose significantly, but also their demographic profiles and work roles have become more diversified, in most countries and societies. It appears that these 'new players' have gradually changed the portrait of international academics in individual countries and higher education systems (Altbach and Yudkevich, 2017).
A lot of studies have been undertaken on academics' motivations for international flow (Baruffaldi et. Al., 2016; Siekierski, et al., 2018; Huang, 2018a), their contributions, particularly to US science (Levin and Stephan, 1999; Stephan & Levin, 2001; Libaers, 2007; Kim et al., 2011; Huang, 2018b), as well as personal, institutional, policy and cultural challenges they face (Cradden, 2007; Leisyte et al. 2011; Huang et al., 2019). However, less is known of international work roles and contributions in other countries, and particularly international researchers and scientists' characteristics and responsibilities in research institutes and industry and business.

This online international workshop is to explore the most striking characteristics of international academics from university, research institute and industry and business, primarily focusing on analyzing and discussing their work roles and contributions, and issues facing them in case countries and systems. Multiple research methods, including semi-structured interviews, questionnaire survey, case study, and analysis of international academics' profiles from publicly available sources, and others are used in case countries. The workshop is mainly concerned with the following research questions:

- What are the most striking characteristics of international academics? Are they different from local academics?
- What are main work roles or responsibilities of international academics in their affiliations? Are they different from domestic academics? If any, how different?
- What general and specific challenges international academics face in their academic activities and workplaces? Are they different from domestic academics? If any, how different?

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PROGRAM

Each speaker talks for about 10 minutes, followed by 5-minute Q & A.

20:00~ Online registration

MC: Akiyoshi Yonezawa, Tohoku University, Japan

20:30~20:35 Opening remarks
Futao HUANG, Hiroshima University, Japan

20:35~20:50 **Presentation 1**
SOJOURN or STAY? International Researchers in the Australian University and Research System
一時滞在か滞在か？オーストラリアの大学・研究システムにおける外国人研究者
Anthony Welch, the University of Sydney, Australia

20:50~21:05 **Presentation 2**
A Study on International Faculty in a Research University in China: Who Are They and Why Do They Work in China?
中国の研究型大学における外国人教員に関する研究：彼ら/彼女らは誰か、なぜ中国で働くのか？
Qiongqiong Chen, Southern University of Science and Technology, China & Yuan Li, Southern University of Science and Technology, China

21:05~21:20 **Presentation 3**
Hong Kong Overseas Academics' Intellectual Processes and Outcomes
香港の外国人研究者の知的プロセスとアウトカム
Li-fang Zhang, the University of Hong Kong & Zhengli Xie, the University of Hong Kong

21:20~21:35 **Presentation 4**
International Researchers in Japanese Companies: Their Motivations, Work Roles, and Contributions
日本企業における外国人研究者：来日動機、役割と貢献
Ming Li, Osaka University, Japan & Futao Huang, Hiroshima University, Japan

21:35~21:45 ***TEA Break for 10 minutes***

MC: Hans de Wit,
Boston College Center for International Higher Education, the USA

21:45~22:00 **Presentation 5**
Transnational Universities and International Academics in Southeast Asia: Talent Strategy and Dual Embeddedness
東南アジアのトランスナショナル大学と外国人研究者:人材戦略と二重包摂
LIU Hong, Nanyang Technological University, Singapore & HUANG Xi, Nanyang Technological University, Singapore

22:00~22:15 **Presentation 6**
International Academics in Government-Funded Research Institutes in Korea: Work Role, Contribution, and Challenges
韓国の公的研究機関における外国人研究者：役割、貢献と直面課題
Yangson Kim, Hiroshima University, Japan, and Inyoung Song, Korean Council for University Education, South Korea

22:15~22:30 **Presentation 7**
Not all Foreigners are Strangers: Cultural Differences within International Academics in the UK
外国人はすべてよそ者であるわけではない：英国における外国人研究者の文化的差異
Giulio Marini, Institute of Education, University College London, the UK & Toma Pustelnikovaite, Abertay University, Scotland

22:30~22:45 **Presentation 8**
International Academics in Mainland China: What Do We Know and What Do We Need to Know?
中国本土における外国人研究者：私たちは何を知り、何を知る必要があるのか？
Xin Xu, University of Oxford, the UK, Andrea Braun Střelcová, the Max Planck Institute for the History of Science, Germany, Giulio Marini, Institute of Education, University College London, the UK, Futao Huang, Hiroshima University, Japan, & Yuzhuo Cai, Tampere University, Finland

22:45~23:00 **Presentation 9**
Foreign PhDs in the United States: Historical Trends Analysis of Their Professional Experiences and Career Mobility within and Beyond Academic Sectors

米国における外国人博士号取得者: 彼ら/彼女らの専門的経験に関する歴史的傾向分析と学問分野内外におけるキャリア移動
Dongbin Kim, Michigan State University, the USA & Sehee Kim, Michigan State University, the USA

MC: Futao Huang, Hiroshima University, Japan

23:00~23:30

General discussion

Speakers and project members only

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一部　国際比較的研究（英語）

Part I　Comparative and Global Perspective

1. Sojourn or Stay? International researchers in the Australian H. Ed. & Research system

Antony Welch (University of Sydney, Australia)

An International system

- Reflecting its standing as a country of migration, the Australian higher education system is highly international. International students form 25% of total H. Ed enrolments, and international staff are widely represented.
- International researchers are also represented among think tanks and research organisations, such as the national Commonwealth Scientific and Industrial Research Organisation (CSIRO).
- While the first universities (e.g. Sydney 1850, Melbourne 1853) largely drew on British talent, (with a few Germans), 50 years of non-discriminatory migration now means talent comes from everywhere.
- But Australia's decades-long bias towards skilled migration affords priority to applicants who are (young and) well qualified. This has seen a steady shift towards high-skilled migrants such as researchers.
- This has meant that among OECD member states, Australia has had the highest nett brain gain.

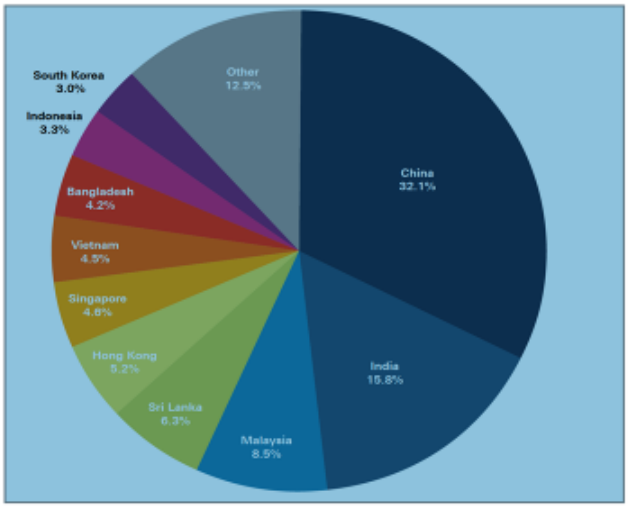
Change towards skilled migration, 1990-2020.

	1990–91		1996–97		2003–04		2018–09	
CATEGORY	TOTAL	%	TOTAL	%	TOTAL	%	TOTAL	%
Family	53,934	44.3	36,490	42.6	29,548	26.6	47,247	29.5
Skilled	48,421	39.8	19,697	22.9	51,529	46.8	109,713	68.4
Gross annual intake	121,690		85,752		110,000		160,323	

The rise of Asian researchers

- Australia's increasing (if uneven) integration into Asia, together with the rise of Asian research systems (e.g. Singapore, China) has meant that more and more researchers stem from Asia.
- Recent research showed the Australian university system not only to be among the most diverse worldwide, but revealed significant growth in Asian researchers within the system.
- The proportion of Australian academics born in Asia grew by over 50 per cent during 2005-2015, from 10 per cent to 15.4 per cent overall. This parallels the equivalent proportion in the overall population.

Sources of Asian-born Academics, 2015



Representation is not always Recognition

- The increasing number and proportion of Asian researchers (Many of whom take their Ph. D. within Australia) within the overall research system represents an important enrichment and diversification of the H. Ed. and research system.
- It also aligns well with the international student profile, most of whom stem from East and South East Asia.
- But interviews with numbers of such individuals reveals that, while their disciplinary expertise is valued, the additional work undertaken by many, to build and deepen ties with researchers from the home country, is not always valued (as much). Language and cultural issues can also be a problem at times.
- The rise of Asian knowledge diasporas is a significant resource, however, and an important bridge between the Australian research system, and Asian systems.
- China, for example, is now one of Australia's major knowledge partners, in key natural scientific disciplines and (less) in the social sciences.

Culture Wars and International Researchers

- But rising US-China tensions in recent years, and the related pressure by the US on its allies to align their policies, also afflict international collaboration with Chinese researchers.
- As has happened in several other countries, incidents of anti-Chinese (and anti-Asian) sentiments and harassment have risen, and some Chinese-Australian colleagues have raised concerns. Some sensationalised media accounts have helped lead to clashes between pro-China and anti-China groups on campus.
- Foreign Interference legislation has burdened universities with added administration, and courses such as on Chinese politics, for example, have become more 'complex' to teach.
- In conclusion, we must not allow the rich store of international talent in Australia to have their activities and contributions infringed by the ongoing US-China Culture Wars, and associated securitisation of related policy.

2. Motivations and Work Roles of International Faculty in China[1]

Futao Huang (Hiroshima University, Japan)

Introduction

Since the 1990s, various important drivers have facilitated the international mobility of scientists, researchers and faculty members across nations and regions (OECD 2015). In some countries and regions, the main rationale of mobility relates to diplomacy or cultural development (Knight 2004). In others, the aim is to attract talents from other countries to support domestic knowledge economies (Woldegiyorgis, Proctor and de Wit 2018). As an integral part of the cross-border mobility of academics and scientists, it is generally agreed that recruiting international talents, including faculty members, from other countries or regions is considered as an effective way to enhance global competitiveness and to improve academic excellence of national higher education and research (Morano-Foadi 2005; Kim and Locke 2010). In East and Southeast Asia, countries like China, Japan, Korea, Malaysia, and Singapore share this perspective (OECD 2001). In these countries, hiring international faculty has played an increasingly important role in facilitating the internationalization of higher education, building up world-class universities as well as levelling quality and global competitiveness in the national higher education and research systems, especially since the early 2000s (Hazelkorn 2016).

Compared to much research on the international mobility of academics and scientists, and on recruiting inbound international faculty members in Western countries like the United States, the UK some EU countries, and even Japan (Huang, Finkelstein and Rostan 2014; Altbach and Yudkevich 2017; Brotherhood, Hammond and Kim 2020), there has been less research on inbound international faculty in Chinese universities. Among the existing research, some researchers analyse how the Chinese government created and implemented strategies to attract international talents from other countries, especially advanced Western countries (Cao 2004; Chu 2013; Kim 2017). Kim's research (2015) describes foreign instructors' reasons for migrating to mainland China in addition to their academic activities and the difficulties they face in their Chinese universities, based on interviews with forty-one non-Chinese university instructors teaching in Beijing. Wu and Huang (2018) explore the main characteristics and motivations of international faculty in several case universities in Shanghai by discipline, age, gender and other characteristics. Larbi and Ashraf (2020), drawing on interviews with international academics in Beijing, investigate how international academics view Chinese academia as either resourceful or restrictive for their academic careers and the challenges that international academics face in relation to mobility. However, little is known of international faculty's motivations to work in China, and their work roles in China, whether based on quantitative or qualitative analyses.

This chapter discusses the main characteristics of full-time international faculty in several Chinese universities (excluding faculty hired as language teachers), focusing on their motivations for entering and working in China as well as on their work roles. Both quantitative and qualitative research methods are used. First, the chapter briefly reviews previous research. Second, it outlines key changes

[1] This study will be published as Chapter 11 in Marginson, S & Xu, X. (eds.). (2022). *Changing Higher Education in East Asia*. Bloomsbury Publishing.

that have occurred in relation to international faculty in China, from a historical perspective, and discusses recent strategies relating to attracting international faculty to China. Third, it describes the demographic profiles, motivations and work roles of international faculty in Chinese universities based on findings from a survey and semi-structured interviews. The study concludes with an overall summary of why international faculty move to work in China and what they do after entering the country.

In this chapter, international faculty are defined as full-time faculty members who are non-Chinese citizens or foreign passport holders. This differs from definitions based on place of birth (foreign-born) or education (foreign- educated) as used in the United States and Australia. The term Waiji Jiaoshi in Chinese is similar to 'international faculty' in English. It normally refers to all teachers with foreign nationalities or citizenships who are hired in kindergartens, schools and higher education institutions in China. In the chapter, international faculty includes Waiji Jiaoshi at higher education institutions (note that most of this group are, however, usually language teachers who are not included in the study); faculty members who are hired in professional departments, colleges or schools; and high-level talents with foreign passports who are mainly concerned with research and writing up papers in Chinese universities.

Context

In the late nineteenth century, when the Qing Dynasty attempted to establish a modern higher education system, many international or foreign experts and academics were invited to come to China (Altbach and Selvaratnam 1989). Between the early twentieth century and the late 1920s, various Christian missionary groups established fourteen mission universities in China. Many Western faculty and administrators worked in these Western-style universities (Ng 2006, 2019). After the People's Republic of China was established in 1949, the new government invited thousands of Soviet educators and specialists in various fields to come to China. Although all of them returned by July 1960 following the outbreak of Sino-Soviet ideological conflict, they made a remarkable contribution to China's socialist construction, by restructuring China's higher education system and training university staff (Shen 2009).

As part of the culture revolution from 1966 to 1976, a great revolution also occurred in higher education. As China attempted to search for a totally new 'Chinese way' in higher education and research, and emphasized the contribution of higher education to proletarian politics and ideologies, and to solving particular problem in the Chinese society, the inward transmission of nearly all systematic Western knowledge in humanities and social sciences was blocked, and there were no real international exchange activities with either the former Soviet Union or the United States and other Western countries. The hostility between China and the United States from 1949 onwards, and the ideological and political conflicts with the former Soviet Union after the late 1950s, meant that in China it was almost impossible to educate and train domestic academics and scientists who understood Western developments in science and technology and had advanced knowledge. Because China lacked high-level talents or internationally recognized scholars in science and technology, when the reform and open-door policy was implemented from 1978 onwards, there was an urgent need to attract high-level overseas talents, including international scholars, to work in China. The early stage of internationalization of China's higher education from 1978 to 1992 was primarily concerned with dispatching students, scholars and faculty members abroad to learn advanced studies and conduct high-level research, inviting foreign scholars and experts to China, and the practice of teaching and learning foreign languages, especially the English

language. As the English language become one of the university-wide subjects, international faculty, especially those from English-speaking countries, were hired at Chinese universities as language teachers. Their numbers expanded rapidly with the massification of China's higher education from the late 1990s onwards (Huang 2003).

After 1995, the emergence and development of transnational higher education institutions and programmes (Zhongwai Hezuo Banxue in Chinese, meaning co-operation between China and foreign countries in the operation or management of higher education institutions and educational programmes) generated the need for a large number of international faculty to work in China, in relation to educational programmes for domestic students that were provided either in branch campuses of foreign universities in collaboration with China's universities or within China's universities where joint programmes were provided in cooperation with institutions from the United States, Australia, the UK, Canada, France, Norway and Singapore. These faculty differed from the international faculty exclusively engaged in teaching foreign language for domestic undergraduate students. The fields of study offered in the branch campuses of foreign universities, and joint programmes inside Chinese universities, that became the task of international faculty (MOE 1998) included international finance, international accounting, computing, marketing, secretarial studies, fashion design, commercial English, practical English and other fields. With rapid growth in the number of both branch campuses of foreign universities and Sino-foreign jointly operated educational programmes in China, the number of international faculty working in these branch campuses and joint programmes expanded quickly. Some were directly dispatched by the foreign partner or home universities to Chinese campuses, while others were hired by the Sino-foreign jointly collaborative universities or branch campuses. For example, the University of Nottingham Ningbo China (UNNC) was the first Sino-foreign university, established in 2004. It now has an international community of approximately 8000 students and faculty members from about sixty countries. Many of its faculty members are world authorities in their fields (UNNC 2020).

With the outflow of Chinese scholars, faculty members and students abroad increased markedly from the early 1980s. The Chinese government, since the early 1990s, has made various efforts to attract overseas Chinese scholars, especially high-level young researchers or scientists undertaking research in cutting-edge fields of science and technology in advanced Western countries, to return and work in China (Zweig 2006; Welch and Hao 2013). Later, some of these so-called talents-attracting programmes also began to recruit non¬Chinese nationals. As early as 1994, Chinese Academy of Sciences developed the Hundred Talents Programs to recruit skilled professionals from abroad. Although the main purpose of the programme was to attract young Chinese scholars who obtained their degrees in science and technology from advanced Western countries or had experience of conducting research in these countries, in 2011 it also began to attract high-level talents with foreign nationality and citizenship. According to Bai (2014), president of Chinese Academy of Sciences, by 2013, a total of 2145 high-level scholars had been attracted to work in China. Over 90 per cent came from the United States or European countries. Nearly one-third of them previously worked in either global top 100 universities or in fifty-nine internationally recognized research institutes. Soon after the implementation of the Hundred Talents Programs, other national-level programmes were launched by the central-level ministries and departments to attract both overseas Chinese scholars and foreign scholars to work in China. Major programmes include the Changjiang Scholars Program of 1998, the Thousand Talents Plan of 2008, Recruitment Programs of Young Global Experts of 2011, and the Ten Thousand Talents Plan of 2012 (Peters and Besley 2018). Some globally renowned academics are given the title of Changjiang Scholar. For example, Michael Herzfeld, a professor in the anthropology department of Harvard University, was

appointed to be a Changjiang Scholar at the beginning of 2015 (Byju and Levine 2015).

There are no publicly available data of how may international scholars or scientists have been recruited to come to China through all these programmes together, but by the mid-2017, the Thousand Talents Plan had attracted 381 foreigners (Jia 2018). Among these foreign scholars, some are world-famous scientists. For example, it has been reported that Professor Charles Lieber, a prominent Harvard University chemist and nanotechnology pioneer, was recruited to work in Wuhan University of Technology through the Thousand Talents Plan (Subbaraman 2020). In relation to the recruitment of high-level talents from abroad, the significance of the 985 Project in 1998 and the Double World-Class Project in 2017 cannot be overestimated. These projects have aimed at improving the quality of China's higher education and research, lifting the global competitiveness of China's higher education, building world-class universities and establishing disciplines that are globally first-class. Similar to the 985 Project but much more ambitious, the key goal of the Double World-Class Project in 2017 is to build forty-two world-class universities and approximately 456 world-class disciplines in ninety-five universities by mid-century. Hiring global talents is considered to be one of the most effective and quickest ways to achieve the goal (Huang 2017). In addition to these national-level programmes aimed at recruiting high-level talents from foreign countries, the central government expects local authorities and individual universities, especially research-intensive universities, to hire more international faculty members who conduct research and teach graduate programmes in professional fields. The Shanghai local government has several supportive policies designed to attract increased numbers of high-level international talents to work in Shanghai (Shanghai Administration of Foreign Experts Affairs (2021).

As a result, a large number of universities have developed their own strategies, job positions and salary systems so as to attract international faculty to help them fulfil their missions. Top universities like Peking and Tsinghua, and Shanghai Jiaotong, hope that by attracting top international faculty members, they will enhance the standard of their academic faculty, their internationalization, their global reputation and their standing in major global university ranking systems (Huang 2015). Even non-research universities, including local public institutions, hope that by employing high-level international faculty members they will better incorporate the international dimension into their university wide curricula, build their research capacity and level, form international academic networks and especially train graduate students and young academics. Moreover, as mentioned earlier, the emergence and expansion of Sino-foreign collaborative programmes and universities in China has continued to generate increasing numbers of international faculty members.

Recruiting international faculty members from abroad is only one part of China's ambitious plans to attract high-level talents from foreign countries. Without a doubt, the changing goals of internationalization of China's higher education, and the other factors discussed above - especially the programmes and strategies developed at the levels of local authorities and individual universities — have facilitated a rapid rise in the number of international high- level talents, including faculty members, to work in China. However, certain issues have emerged. For example, given national policies relating to migration, including the adoption of the Green Card (Permanent Residence Card) System in 2004 (Wang and Liu 2014), given China's social welfare systems and given the relatively low level of internationalization of many Chinese cities compared to Singapore and even Japan, these recruitment programmes have not been able to permanently attract the return of many of the best and brightest Chinese students, and the entry of international scholars, beyond the length of their overseas research and study stint (Cao 2008).

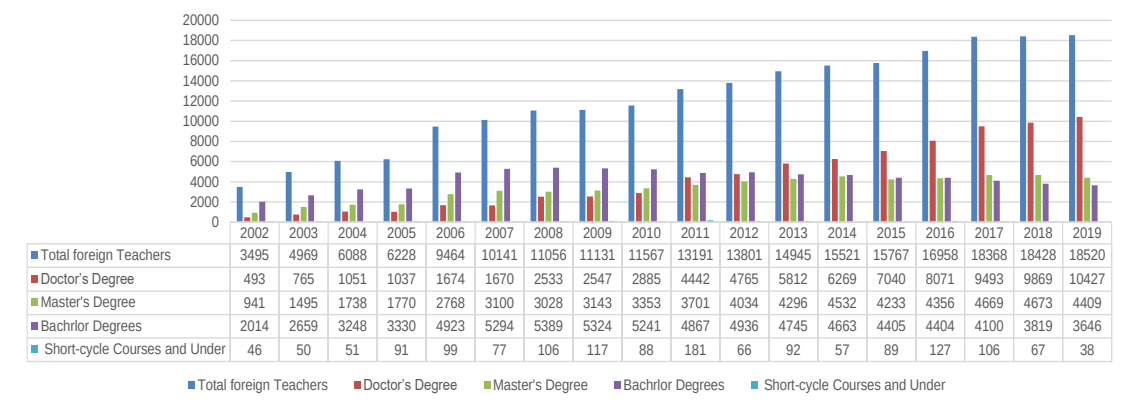
Further, as the majority of research-intensive and leading universities are located in big cities

and coastal areas, a large proportion of the international scholars and faculty members are hired at leading universities and branch campuses of foreign universities that tend to be located in wealthier places in China. There is a net inflow of high-level talents from abroad into good universities and economically developed areas, while the northeastern and midwestern regions have difficulties in attracting these talents (Zhou, Guo and Liu 2018). This is one reason why this study focuses only on international faculty members hired at research-intensive universities, local public universities in the big cities and Sino-foreign jointly collaborative universities.

Growth of Foreign Teachers

There are no available national statistics of all international faculty members working in China. Partial data are available, for some faculty only.

The Ministry of Education issues a national table of foreign teachers (*Waiji jiaoshi* in Chinese) who are hired at Chinese higher education institutions every year (Figure 1). All university students in China are required to learn the English language as one compulsory subject and the number of language teachers is relatively easy to gather at a national level. These foreign teachers are hired as a result of the work of the national-level agency that is specifically in charge of inviting and recruiting international faculty members to come to China and work in Chinese higher education institutions on a fixed term basis. As a large number of these faculty are employed at Chinese higher education institutions as language teachers, the phrase 'foreign teacher' is mostly used as an official title for them. This is one category of the various academics, experts and scientists who move from foreign countries to work in China temporarily, for periods ranging from more than one year to less than one month. Those who are hired by individual higher education institutions based on various projects or college or faculty-wide budgets are not included in Figure 1. These foreign teachers only constitute one part of all the international faculty members who are hired at Chinese higher education institutions. In most cases, they are not considered to be full-time faculty members, let alone tenured faculty members.



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total foreign Teachers	3495	4969	6088	6228	9464	10141	11056	11131	11567	13191	13801	14945	15521	15767	16958	18368	18428	18520
Doctor's Degree	493	765	1051	1037	1674	1670	2533	2547	2885	4442	4765	5812	6269	7040	8071	9493	9869	10427
Master's Degree	941	1495	1738	1770	2768	3100	3028	3143	3353	3701	4034	4296	4532	4233	4356	4669	4673	4409
Bachrlor Degrees	2014	2659	3248	3330	4923	5294	5389	5324	5241	4867	4936	4745	4663	4405	4404	4100	3819	3646
Short-cycle Courses and Under	46	50	51	91	99	77	106	117	88	181	66	92	57	89	127	106	67	38

Figure 1. Changes in foreign teachers at Chinese HEIs
Source: MoE (2019). *教育统计数据* [Educational Statistics]. Retrieved from http://www.moe.gov.cn/s78/A03/moe_560/jytjsj_2019/ (in Chinese).

In addition to that group, there are many full-time international faculty who are not primarily

engaged in teaching foreign languages for Chinese students, but employed as faculty members or researchers in professional faculties, colleges or schools. These include those invited and employed in individual universities and research institutes as specially hired professors as well as scientists who work on various national projects and institutional projects. Unfortunately, summative data for this second group are not publicly available.

As shown in Figure 1, the number of foreign teachers at Chinese universities has expanded rapidly, growing from 3495 in 2002 to 18,520 in 2019, a five-fold increase over the period. Not only did the size of the foreign teacher workforce grow, but also the number of foreign teachers with doctoral degrees increased steadily. In 2002, the largest number of foreign teachers was those with bachelor degrees (2014), followed by those with master's degrees (941) and those with doctoral degrees (493). By 2019, those with doctoral degrees (10,427) had become the largest group, followed by those with master's degrees (4409) and those with bachelors (3646). This suggests that China has made good progress in attracting and hiring foreign teachers, based on the quality of academic degrees held.

Research Design and Methods

The study summarized in this chapter addresses the following two broad research questions.

1. Why did international faculty come to work in Chinese universities?
2. What roles were they expected to play in their current universities?

In order to deal with these questions, the study uses relevant data from a survey of full-time international faculty at twelve Chinese universities which was carried out from July to August 2017. The list of the target population was created based on the websites and other publicly available sources of international faculty who worked in Chinese universities. The study includes four research universities, six local public universities and two Sino-foreign jointly collaborative universities located in big cities such as Beijing, Shanghai and Hangzhou. By looking at the homepages and other publicly available sources of information on approximately 14,800 full-time faculty in these universities, the study team collected the profiles of 855 faculty who were considered as international faculty on the basis of name and personal experiences. The data on their personal, educational and professional characteristics, especially the nationalities or citizenships of these faculty members, were confirmed and checked for correctness via emails and other social media.

In July 2017, on the basis of the information collected as detailed above, the research team sent emails to 365 international faculty in these twelve universities, in English, with a link to an online survey questionnaire and an invitation to recipients to participate in the survey. In September 2017, after excluding the number of part-time international faculty answering to the survey, the research team received thirty-eight valid responses (response rate 10.4 per cent) from full-time faculty with foreign citizenship and nationalities. The main characteristics of these full-time international faculty in the twelve universities are presented in Table 1.

In terms of nationality, international faculty from English-speaking countries made up the largest proportion of the total. By discipline, the largest group were from humanities and social sciences. The fuller study, of which this study in China is one part, is an international and comparative research project focusing on the identities, motivations and work roles of full-time international faculty in

universities offering four-year programmes in several countries: the United States, the UK, Australia, the Netherlands, China, South Korea and Singapore, and also the Hong Kong Special Administrative Region

Table 1 Characteristics of International Faculty Survey Respondents

Gender	Male	32 (86%)
	Female	5 (14%)
Nationality	United States	13 (35%)
	UK	6 (16%)
	France	4 (11%)
	Germany	4 (11%)
	Australia	2 (%)
	Canada	1 (3%)
	Others	7 (19%)
Degree	Bachelor	28 (30%)
	Master	24 (26%)
	Doctoral degree	31 (34%)
	Post-doctoral degree	9 (10%)
Academic rank		
	Professor/Research professor	10 (27%)
	Specially appointed professor	1 (3%)
	Associate professor/Associate research professor	13 (35%)
	Lecturer/Assistant professor	9 (24%)
	Other (please specify)	4 (11%)
Discipline		
	Teacher training and education science	2 (5%)
	Humanities and arts	10 (27%)
	Social and behavioural sciences	4 (11%)
	Business and administration, economics	5 (14%)
	Law	3 (8%)
	Life sciences	2 (5%)
	Physical sciences, mathematics	6 (16%)
	Computer sciences	1 (3%)
	Engineering, manufacturing and construction, architecture	2 (5%)
	Other (please specify)	2 (6%)
Employment situation	Permanently employed (tenured)	11 (30%)
	Continuously employed (no preset term, but no guarantee of permanence)	4 (11%)
	Fixed-term employment with permanent/continuous employment prospects (tenure-track)	10 (27%)
	Fixed-term employment without permanent/continuous employment	12 (32%)
	prospects	

Source: Based on Huang's investigation in 2017.

(SAR) of China. In the case countries, a common survey questionnaire and interview guideline were used. The main objective of the survey of international faculty was to obtain a better understanding of the actual situation of these international faculty. In the case of China, specifically, it aimed at identifying their career paths, living and working conditions, academic life and work, their roles, duties and responsibilities, and the challenges facing them.

As shown in the sections that follow, the motivations of the international faculty in China were shaped by academic or professional factors, cultural factors, economic factors, political factors and others. In relation to their expected roles, these related to engagement in international activities, teaching and research activities, faculty development activities and others. It is hoped that this research provides a comprehensive description of faculty motivations to work in China and the roles they expect, or are expected, to play.

As mentioned earlier, the study also undertook semi-structured interviews with a dozen international academics from different countries, working at different universities in China, before their profiles were gathered and analysed. These interviews were carried out in English with a common interview guideline, and they focused on the faculty's personal background, motivations of coming to China, their work roles, the challenges they face as well as their career expectations and prospect of an academic career. Each interview lasted for about forty to sixty minutes, depending on interviewees' convenience. All except two of the interviews were recorded and coded. The main characteristics of interviewees are described in Table 2. As indicated in Table 1, over half of all international faculty come from the United States and the UK, and this study used the findings only from interviews with faculty members from English-speaking countries.

Table 2. Profiles of International Faculty Interviewees

University	Location	Institutional type	Interviewees
Q	Beijing	Research university	Professor A from Canada in School of Humanities Professor B from the UK in School of Medical Sciences
X	Southeast	Local public university	Associate professor from the United States in School of Engineering
S	Shanghai	Research university	Professor from the United States in School of Mechanics
D	Northeast	Research university	Professor from the United States in School of Material Science
J	Northeast	Research university	Professor from the UK in School of Sciences
H	Central China	Local public university	Professor from the United States in School of Life Sciences
N	East China	Sino-foreign collaborative university	Associate professor from the UK in School of Business

Source: Based on Huang's interviews in 2015-16.

In analysing the findings from the semi-structured interviews to gain a comprehensive understanding of participants' interpretations of their expected roles in China's universities, the team members read all relevant transcripts of interviews and became familiar with their main ideas and key points. The team members also reviewed and defined major themes, and conceptualized key themes in relation to the research questions. The team developed an overall sense of the structure of all analysed

data, which is presented below using interviewees' comments and observations to illustrate this structure.

Results of Survey and Interviews

Motivations to Work in China Based on the Survey

As Table 3 shows, if 'Comparatively important' and 'Strongly important' are combined, twenty-nine of international faculty stated that they came to work to China for both academic or professional reasons. This is followed by those who answered with 'fondness for Chinese life and culture' (twenty-five), and those with 'Difficulty of finding employment in home country' (thirteen). In contrast, neither the economic reason 'Better living conditions than home country' nor 'Family reason is important for them to work in China' were important, because only eight respondents admitted each of these two factors.

Table 3 International Faculty's Motivation to Work in Chinese Universities

Item	Strongly disagree	Comparatively disagree	Neutral	Comparatively agree	Strongly agree	Average
Academic or professional reasons	1	1	6	7	22	4.3
Fondness for Chinese life and culture	5	2	15	10	5	3.22
Difficulty of finding employment in home country	12	7	5	9	4	2.62
Better living conditions than home country	11	12	6	8	0	2.3
Family reason	14	4	11	5	3	2.43
Political reasons	22	7	8	0	0	1.62
By chance	12	1	12	9	3	2.73
Other	10	0	24	2	1	2.57

Note: Survey question: Why have your decided to teach/do research at a university in China? ('1—5'indicates 'Strongly disagree — Strongly agree').

Source: Based on Huang's investigation in 2017.

We also asked international faculty to rate the importance of several factors to their work life in China; a question similar to the one about their motivation to work in Chinese universities. As Table 4 reveals, combining 'Comparatively important' and 'Strongly important', all mentioned 'interesting work', suggesting that this is the most important factor affecting their work life in China. This is followed by 'Personal independence in research' (thirty-six), and 'Personal independence in teaching' (thirty-four). Only twenty-eight of them noted 'Salary', which was ranked to be the fifth important factor among all the eight factors listed in the questionnaire. Apparently, the academic or professional reason and interesting work are the most decisive factors attracting and affect them to work in China.With regard to the methods used by their current university to recruit international faculty, the data from the survey indicate that the largest number of them (twenty-two) applied directly to their current university through public or international advertisement for the post, followed by those applied for their current post through personal

contact (fifteen) and those who were employed through an intermediate agency (three).

Table 4. Factors Affecting International Faculty's Work Life in China

Item	Strongly unimportant	Comparatively unimportant	Average	Comparatively important	Strongly important
Salary	0	2	8	19	9
Job security	1	1	11	17	8
Career opportunities	1	4	6	21	6
Institutional prestige	1	4	11	15	7
Opportunities to learn and enhance competences	0	1	7	18	12
Personal independence in teaching	0	0	4	16	18
Personal independence in research	0	0	2	13	23
Interesting work	0	0	0	10	28

Note: Survey question: How do you rate the importance of the following factors to your work life? ('1—5'indicates 'Strongly disagree — Strongly agree').

Source: Based on Huang's investigation in 2017

Data on Motivations from the Interviews

As suggested in the following findings, from interviews with all the participants in Table 2, it seems that almost all of the interviewees emphasized academic and professional reasons for working in their current universities. Those reasons included favourable research condition, intensive research grant, personal support, the provision of advanced equipment and laboratories, the possibility of undertaking of long-term research and especially the capacity to concentrate on research without many teaching duties. For example, the professor at J University provided a typical answer.

> I found working in the current university is more exciting and productive compared to my previous affiliation in UK. I do not have to worry about research funding, facilities or supportive systems here. You just do research as you wish based on the contract. I take a great deal of pleasure from my academic and professional life here. (Professor at J University)

Self-actualization was one more factor affecting the decision of some to migrate to China. Some mentioned that it was possible to realize their ambitious dream and academic goals and also apply their knowledge and experience in Chinese universities. In a major sense, this can also be understood to be relating to academic or professional motivation.

I used to work in a top research centre of environment science in a European country. I was a junior research assistant there and worked very hard. My research was not so evaluated as I expected. Perhaps it is because I was not graduated from that European country. But in current university, I am highly respected despite my young age. I am tutoring young doctoral and academics here in how to publish good papers, and even involved in faculty development activities. (Associate professor at N University)

Different from many Western countries, international faculty in Chinese universities also include some overseas Chinese scholars who changed their nationalities after going to foreign countries. In the study, there is one China- born faculty who changed his nationality to the American and returned to his university of graduation as a specially appointed professor. According to him, the most important reason for him to work in his current university is to contribute to the university in which he learnt a lot while he was a college student. His goal is to make his home university more internationally competitive and more internationally accepted. Similarly, his motivation to work in China is driven by academic or professional reasons.

I graduated from this university about twenty-five years ago. I should contribute to my home university with my academic reputation and international networking in return to my beloved professors here, I suppose. (Professor A at Q University)

Some mentioned higher salaries and better treatment which they received from Chinese universities, through both national programmes and the universities that employed the faculty.

As I am invited to work here based on 'the One Hundred Talent Project', my salary is much higher than my Chinese colleagues. Besides, I have been allocated additional research grant and other research allowances, as well as a good team working for my project. I am quite satisfied with working and employment situation here. (Professor at S University)

Expected Work Roles Based on the Survey

As mentioned earlier, as in other East Asian countries like Japan and South Korea, international faculty are broadly divided into two types. One type refers to language teachers, who are outside the target population of the survey in this study, and the other refers to non-language teachers affiliated to professional colleges or faculties within their universities.

Table 5 presents the data concerning to what extent international faculty consider themselves to be exposed to the various expectations by their universities. In total, the largest number of them respond that

they are expected to enhance the international reputation of their current universities (3.81, combining both ‘Comparatively high’ and ‘To a very high extent’), followed by those yielding high research productivity (3.62), being active in carrying out international activities (3.24), bridging the linkage of their current universities and universities of their home countries (2.65), organizing faculty development activities in their current universities (2.76), recruiting more international students (2.65), undertaking any activities which cannot be accomplished by my Chinese colleagues here (2.65) and teaching language programmes for students (1.97). Obviously, from the perspective of international faculty, they are hired to enhance the international reputation of Chinese universities through their research activities. In addition, they are expected to be primarily involved in international activities, but the fewest number of them are expected to teach language programmes for students.

Table 5 International Faculty’s Expected Roles in Their University

Item	**Not at all**	**Comparatively low**	**Average**	**Comparatively high**	**To a very high extent**	**Mean**
Undertaking any activities which cannot be	9	6	12	9	1	2.65
Teaching language programmes for students	20	8	2	4	3	1.97
Bridging the linkage of my current university and	9	9	6	12	1	2.65
Recruiting more international students	10	7	9	8	3	2.65
Helping enhance the international reputation of	3	0	9	14	11	3.81
Organizing faculty development activities in	7	9	9	10	2	2.76
Yielding high research productivity	5	3	3	16	10	3.62
Being active in carrying out international activities	6	2	12	11	6	3.24
Other	7	1	25	1	3	2.78

Note: Survey question : To what extent do you consider yourself to be exposed to the following expectations by your institution? ’1—5’indicates 'Not at all −To a very high extent').

Source: Based on Huang’s investigation in 2017.

Expected Roles Based on the Interviews

In relation to their expected roles, despite differences in degree and expression, it seems that no fundamental differences can be found between the interviewees' answers and the results from the survey. None mentioned being asked to recruit more international students for their departments, colleges or schools within their affiliations, or only to teach language programmes for students, especially undergraduate students. Most of them emphasized that they were hired to concentrate on research. Most noted that the universities seem to expect high research productivity from faculty; this was consistent with the results from the survey.

> I do not have teaching responsibility neither I am asked to attend any committees. What I am asked to do is just to conduct research and to publish research papers in SCI journals. (Professor B at Q University from Japan)

Some of them mentioned that they were invited to be leaders of one key discipline or laboratory at a national or international level.

> I am asked to lead a national-level key discipline and form a team. My team is expected to produce graduates with international competitiveness and especially to publish research articles in journals indexed by the Web of Science such as Science and Nature. (Professor at S University from the United States)

One of the interviewees said that he was asked to manage a domestic faculty. Previous studies suggest that that is a rare case in the role played by international faculty in most countries.

> I am executive dean of this college. I am supervising two doctoral students. But my major duty is to run this college modelled on my home university in the United States. (Professor at H University from Japan)

Further, some of them are expected to foster and mentor young academics.

> I am mainly concerning with supervising doctoral students and mentoring young academics here. I also teach them how to write English research papers and how to publish research outputs in internationally peer-reviewed journals. (Associate professor at X University)

In contrast with the situation of language teachers, it appears that the most interviewees' primary roles and responsibilities were engaging in the enhancement of the research quality of their

current affiliations through work on publications in indexed journals, supervision of doctoral students and mentoring of young faculty.

Discussion

Impacted by the massification of Chinese higher education, and the increased emphasis on the importance of teaching and learning of English and other foreign languages on Chinese campuses, the number of international faculty hired as language teachers underwent a major expansion in the past thirty years. Since the late 1990s, strategies to hire a new type of international faculty, non¬language teachers, have developed, at both national and institutional levels. This has facilitated the recruitment of international faculty, who are expected to meet specific requirements in particular fields of study, to achieve goals of internationalization and to enhance the global competitiveness and academic excellence of Chinese universities.

Clearly, the characteristics of international faculty as reported in this survey are different from those of international faculty providing foreign language programmes for undergraduate students in Chinese universities. For example, a majority of the former are male with doctoral degrees, associate professors and US citizens. The largest number of them were associated with the humanities and social sciences, and a majority of them were hired as tenured and tenure¬tracking faculty members. Despite the very limited number of valid respondents, the study depicts a category of international faculty who were additional to the category of language teachers, and also distinct from the category of specially appointed professors who are mostly involved in supervising Chinese doctoral students and young academics, and work as principal investigator in national¬level key laboratories, supported by programmes such as the Thousand Talents Plan and the Changjiang Scholars Programme.

In relation to their motivations for coming to Chinese universities, both the results of the survey and interviews suggest that academic and professional reasons are the most important. These include the availability of adequate research funding, favourable working conditions and the possibility of self¬actualization. These points are consistent not only with recent research by Huang (2018a) who found that academic and professional factors are the two key drivers for international faculty working in Japanese four-year universities, but also largely with research by Janger and Nowotny (2016). These researchers found that ‘attractive jobs satisfy researchers’ “taste for science” and increase their expected scientific productivity, responding to both intrinsic and extrinsic motivations’ (1672). Also, salaries, research funding and working with stimulating peers matter when faculty move from home country to foreign countries. Further, the findings of the present study are partly consistent with Kim’s finding (2015) which notes that many foreign professors moved to China as their last resort for various reasons, including fulfilling research purposes and advancing their careers. These findings were based on the

interviews with forty- one foreign academics working in Beijing.

In relation to their expected work roles, because the study concentrates on the analysis of non-language full-time faculty working in universities, mostly research universities, it is not difficult to understand why most of these faculty are expected to produce research papers and enhance the international reputation of their current universities. This is a fundamental difference in their expected roles, when compared with those of language teachers. From the global and comparative perspective, they are different not only from foreign-born and foreign-educated faculty in the US universities, who are more academically productive than domestic faculty (Kim, Wolf-Wendel and Twombly 2011), but also different from most international faculty in Japanese universities, who are hired so as to carry out duties and undertake activities which cannot be accomplished by Japanese faculty (Huang 2018b).

Conclusions

The main findings of this study are as follows. First, the most striking characteristics of non-language teachers with foreign nationality in Chinese universities have been presented, although some of these characteristics are shared with international faculty in other countries. Second, the survey and interviews demonstrate clearly that the most important factors influencing international faculty to work in Chinese universities are academic or professional, rather than the prospect of better salaries. Third, international faculty are treated differently from language teachers and also somewhat differently from domestic faculty in relation to salaries, working conditions, workload and roles; they are expected to play different roles from those of the language teachers. A new type of international faculty has been gradually forming and expanding among faculty in Chinese higher education institutions. It is likely that the formation and growth of this new type of international faculty has led and will continue to lead to a wide variety of international faculty who are hired in Chinese universities.

The limitations of this research are obvious. First, the number of valid responses from the survey is too small and can hardly provide a comprehensive portrait of international faculty in Chinese universities. Second, as part-time and language teachers are not included in the study, it is unclear as to what extent the main findings from the study apply to those other type of international faculty who are mainly concerned with teaching language programmes in China. Third, it is desirable to develop a deeper and more detailed analysis of the characteristics of international faculty by considering variables such as age, gender and form of employment, an analysis that can account for the impact of these variables on their motivations and expected roles. Finally, a more comprehensive study of the division of labour and work roles between international faculty and domestic faculty, and the impact of institutional context, academic discipline, age, gender and academic rank is sorely needed.

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3. A Research on the Relocation Decision of International Faculty in China

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Introduction

International faculty, often seen as the “spearhead” of internationalization (Altbach & Yudkevich, 2016), has become an increasingly important part of global higher education. Hiring international faculty are usually regarded as a key strategy of internationalization to improve institutional quality and global competitiveness in many countries(Huang & Welch, 2021). It appears that these “new players” have not only changed the profile of faculty team in individual countries and higher education institutions, but also academic professions in the global academic labor market (Altbach & Yudkevich, 2016).

The existing literature on international faculty focuses largely on western countries such as the United States, Canada, Australia and some of the European countries. Less is known about of the situation of international faculty in non-western countries, particularly in the emerging economies in Asia. The expansion of higher education in Asia provides a bulk of new positions in academia and higher education institutions in these emerging Asian countries have become new destinations for attracting global academic professions (Huang & Welch, 2021). With its rise as a global science power, China is becoming another new magnet for international academics (Marini & Xu, 2021). There is a growing number of international faculty working in China’s academia. However, very limited research has been conducted on this group of people, especially their motivations, everyday experiences, academic identities, and career path in Chinese universities.

This paper aims to examine the motivations of international academics who relocate to China to pursue academic career, a non-traditional direction of movement that contradicts most empirical studies of academic mobility. It attempts to find out why they choose to work in China? More specifically, what factors drive these individuals to relocate to China for full-time employment? This study has implications for university leaders seeking to attract and retain qualified faculty members, as well as for scholars who considering pursue academic employment in China. It is also relevant beyond China, as it sheds light on the kinds of issues related to transnational academic mobility.

Literature Review

Transnational academic mobility at a global scale

Transnational academic mobility, a growing and increasingly important part of global higher education, has attracted much attention in both academic studies and polices. Examining the literature on academic mobility, a bulk of studies have been undertaken on the flow of students and academics from developing nations to developed nations. The classic frameworks of "push and pull model" (Altbach, 1998, 2007a; Mahroum, 2000) and the dynamics between "academic centers and peripheries" (Altbach, 2007b; Marginson & van der Wende, 2007), are usually employed to explain the trend of mobility. According to the push and pull model, low salaries, low public research funding, poor facilities, and lack of academic freedom in the home country are usually regarded as the main push factors that encourage academics to seek employment elsewhere; meanwhile, favorable salaries, good working conditions, greater availability of research funds and resources, academic freedom, better access to data and equipment, close to scientific communities, prestige of institution, and reputation of the country in the discipline are often cited as main pull factors related to relocating (Altbach, 1998, 2007a; Cantwell, 2011; Mahroum, 2000). Better economic conditions and research resources are often cited as the most important decisive factors of academic mobility. It is unsurprising that institutions in the United States, Switzerland and the UK which are regarded as academic center in terms of knowledge production, are among the most competitive systems when it comes to the ability to attract international faculty (Janger & Nowotny, 2013). Marginson and van der Wende (2007) claimed that the flows of global students and academics are fundamentally uneven and asymmetrical, highlighting the difference between centers and peripheries in higher education.

While it is common for academics flow to recognized institutions in developed economies, there is a growing phenomenon of reverse flow in academic mobility from the core to the periphery (Lee & Kuzhabekova, 2018). Among the studies that examine international faculty working outside of the Anglo-American contexts, research on Asia is prominent since Asia has developed several attractive destinations. Looking across studies on international faculty at Japan (Huang, 2018a, 2018b; Huang & Chen, 2021), at Kazakhstan (Antoniadou & Quinlan, 2020; Kuzhabekova & Lee, 2018; Lee & Kuzhabekova, 2018), at Korea (Arseneault, 2020), and at Thailand (Burford, Eppolite, Koompraphant, & Uerpairojkit, 2021), two key themes emerged when it comes to the motivations of international faculty move to Asia. The first is the desire to pursue an attractive employment opportunity due to the expansion of higher education and the improvement of research conditions in many Asia countries. The second is related to cultural issues such as the fondness of a different culture, seeking for adventure, and intercultural exposure. Based on a comparative research on international faculty in Asia, Huang and Welch (2021) revealed that although there's some basic patterns of international faculty, significant diversity is evident across the systems. It is important to understand international faculty in a specific

national and institutional context.

Studies on international faculty in China

Comparatively, very limited research has been conducted on international faculty in China, largely because China is not historically a popular destination for international faculty and the number of international faculty is small (Wu & Huang, 2018). During the past two decades, China has made huge efforts to promote internationalization of its higher education to enhance academic excellence and global competitiveness, by attracting overseas Chinese returnees and global talents to work in its universities(Q. Chen, 2016). Several policies have been implemented to introduce global talents by providing favorable conditions and incentives, such as the "Thousand Talents Program" and "Foreign Expert Recruitment Program". Under such efforts, as well as the expansion of China's higher education, the number and scale of international academics working in China has increased significantly (J. Chen & Zhu, 2020).

Despite the rapid increase in the number of international faculty, their proportion among the faculty team is still relatively low. In her research on 30 top research universities in China, Yu(2019) revealed that international faculty accounted for only 1.9% of all full-time faculty, among which 32.7% are ethnic Chinese. Besides, they have high turnover, with average turnover rate of 20% within five years. Larbi and Ashraf (2020)'s research on 26 international academics working in four different universities in China revealed that language barriers, administrative constraints, application for external research funding and cross-cultural differences are major challenges faced by international faculty in China. Wu and Huang (2018) explored the main characteristics and motivations of international faculty in four leading universities in Shanghai, China. They found that most international faculty came to China either for academic or professional reasons, or due to their fondness for Chinese life and culture. However, they defined international faculty of foreign nationality and did not distinguish "overseas Chinese faculty" (ethnic Chinese scholars of foreign nationality) and "foreigner faculty". In fact, it is important to make distinctions between these two groups of international faculty, because both the policies for and implications of those two types, and the variations within them, are quite different. Therefore, this study carries out to explore the motivations of foreigners without Chinese origin.

Methods

Background and Case Selection

This study chose South University (pseudonym) as a case of study. Located in the most cosmopolitan city on the southern coast of China, South University is a new univerity with a strong international orientation and a ten-year history, which is widely regarded as a pioneer of higher education innovation in China. It distinguishes itself from other traditional Chinese universities by its international profile and a new governance and administration system, including the introduction of a Board of Regents (Board of

Trustees), a tenure system, and a PI structure borrowed from the Anglo-Saxon model. Because of its international outlook and close resemblance to Western universities, South University is often considered as one of the most attractive destinations for returning Chinese academics and international faculty in China. More than 90 percent of its faculty members (most of whom are Chinese returnees) are internationally hired and hold doctoral degrees from the West. English is widely used as a medium for teaching and research. We chose this university because it is at the forefront of Chinese higher education innovation and has great influence among Chinese universities in recruiting international faculty.

Data collection and analysis

In this study, an international faculty was defined by three criteria: (a) a foreign-born individual without current or prior Chinese citizenship; (b) on full-time teaching and/or research contract in China; (c) minimum 1-year residency in China. The above criteria exclude visiting professors, individuals on sabbatical, and Chinese academic returnees.

Table 1. Characteristics of the Qualitative Sample.

No.	Nationality	Gender	Age	Rank	Field	Length in China
SS01	Canada	M	50+	Prof./ Senior administrator	Geology	4 years
BB02	Switzerland	M	30-40	Assist. prof.	Finance	3 years
NS03	UK	M	40-50	Assoc. prof.	Biology	7 years
SS04	UK	F	40-50	Lecture	English language	3 years
BB05	Italy	M	40-50	Research Assist. prof.	Finance	3 years
NS 06	USA	M	30-40	Assoc. prof.	Biology	6 years
NS07	Australia	F	30-40	Assist. prof.	Mathematics	2 years
NS08	UK	M	30-40	Assoc. prof.	Physics	4 years
SS09	USA	M	30-40	Junior fellow	European studies	3 years
SS10	Italy	M	30-40	Junior fellow	Italy studies	1 year
NS11	Argentina	F	50+	Prof.	Mathematics	4 years
NS12	Greece	M	50+	Prof.	Computer science	5 years

Since this article aims to explore the motivations of international faculty who explore their academic careers in China, an in-depth face-to-face interview was carried out from 2020-2021. Interviewees were selected with a theoretical sampling principle, taking into account their age, nationality, academic fields, and rank. The interviewees provided a variety of reasons why they chose an international career at South University. A total of 12 international faculty (3 females, 9 males) participated in this study, aged 30-60 years from 8 different cultural backgrounds and different academic disciplines who had worked at Southern University for between 1 and 7 years (shown in Table 1). Following the ethics

protocol of the study, all participants were briefed about the purpose of the study and their rights to anonymity and withdrawal at any time. Each interview lasted between one and two hours. The interviews were conducted in English and recorded with the consent of the participants. To ensure confidentiality, each participant was identified with a pseudonym. Field notes were taken continuously. The authors discussed the field notes together and conducted initial analyses that led to new perspectives and questions.

The data analysis in this study was informed by a combination of inductive analysis of the raw data, deductive coding from the literature review, and the objective of the research from which this paper emerged. The coding process was aided by both a manual coding strategy and a computer-assisted program called Nvivo 11. Because the study is context-bound and was conducted on a limited sample of academics at an international-oriented university in China, the findings are not generalizable beyond the context of the study. However, this study provides a picture of a specific context, raises critical questions and offers a picture of the motivations of international faculty in China.

Findings

This working paper used the classic pull-push framework that is common in the literature on mobility (Altbach, 1998) to guide data interpretation. According to the interview data, push factors include a lack of available full-time academic positions, lack of research funding, limited job security in the home country; pull factors include academic opportunities in China, generous funding, appreciation of science in society, building new institutions and programs, gaining experience in China to expand career opportunities, a sense of adventure, etc. (see Table 2). Frequently, their motivations for mobility are interwoven with push and pull factors, although each motivational factor is presented separately in the following text.

Table 2. Push and Pull factors of international faculty in China

Push	Pull
Lack of employment opportunities	Academic opportunities in China
Lack of research funding	Generous funding
Limited job security	Gaining China's experience to broaden professional career path
Avoid post-doctoral positions	Adventurous spirit
	Science is valued in the society
	Building new institutions and programs: engage in meaningful work
	Family ties

Push motivations

For most participants, the most important push factor was the limited employment opportunities in their home country, especially for younger academics. This is consistent with the literature that the lack of employment opportunities is one of the major push factors for academics to leave a country. The surplus of PhDs in the U.S. and parts of Europe creates a very competitive academic labor market, and this situation is exacerbated by the decline in funding for higher education and research in the West (Cantwell, 2011; Kuzhabekova & Lee, 2018). A junior humanities scholar from the United States told us his story:

> There're just not many jobs. I was talking to one colleague, a friend of mine in the same program. He said that he was told by his adviser that you should not expect to find anything the first year, not even a tenure-track job, not even a postdoc. At most, like some sort of job, like adjunct positions, teaching a lot, paid very little with no promise in the long-term contract. The best you might hope for is a visiting assistant professorship. Um and yeah, that's kind of the situation that we were all facing and my first year out of grad school. It's exactly what I found myself in. (SS09)

An interviewee in the field of natural science from the US expressed dissatisfaction with hiring policies in the United States. As a white, male American, he saw himself in a disadvantaged position when it came to applying for faculty positions. Here is a quote that illustrates his point:

> I really disagree with these policies in the US. There's a lot of conflict. I think a lot of people are upset about current situation on both sides of this argument. So I don't think it's the right time to go back to the US.（NS06）

Some of the early career academics interviewed tried to avoid postdoctoral positions because they often involved limited research security and poor pay. Some individuals left their home country out of frustration with the general academic conditions of the country, such as poor availability of research funding, lack of clear career paths, and factors related to retirement and family issues.

Pull motivations

According to the interview data, the main motivation that leads international academics to move to China is related to *career considerations*. The interviewees indicated that China's booming economy, expanding academic opportunities, favorable talent policies, generous research funding, and the great emphasis on science in society are major pull factors that attracted them to relocate to China. The following quotes illustrate these points:

> So it was growing. And there was reason for optimism. In comparison with, say, the situation elsewhere, I think a big difference is that there's optimism in the Chinese research community. It's growing and there are opportunities. The work is valued. (NS07)

> And China is more ambitious in science. And science is valued more in the society. And to be appreciated is important. In the UK (it) feels like what most people value is kind of based on salary. If you're a banker or something, then you're the coolest. And if you're a scientist, it's a kind of a nerd. (NS08)

> The availability of support in research funding is a key pulling factor. Among the participants, 5 are recipients of the "Thousand Talents Program". For them, this particular program is a critical pull factor for their decisions, as it provides greater availability of resources for their research projects. They expressed their ambition to achieve academic success in China with sufficient funds. One participant said, “So I think the number one thing is I haven't felt any limitation in funding …. so I think that's due to a few things, of course, the young thousand talent project matters most.” (NS06)

Gaining China experience stands out as another important pull reason. For the majority of participants, the trip to China was "the road less travelled." They considered this experience as an adventure and a good ladder for their future academic career. This was especially true for those working in the field of social sciences and humanities. They expressed excitement about working in a completely different cultural context. They were very vocal about how their experiences in China can better prepare them to be more effective researchers, teachers, and administrators.

An academic from the field of social sciences with experience in other cultures expressed his understanding of the value of academic experience in China.

> I have studied in Europe, and then in North America, I want to have a 3rd context, like to have more diverse in my personal experience, professional experience, teaching experience and so forth. I was in the community (getting) familiar with the academic context in the home country, and then I spent like five to seven years in the US. I want to see how things could be different or diverse in a different context. So China brings lots of benefits or interesting opportunities. You have to make your research relevant for a completely different cultural context audience. So definitely that's for sure one of the main factors, the main element that brings me here to China. (SS10).

A language teacher who has worked in different countries and cultures revealed that she would like to have more understanding of the new and growing Chinese student body in her home country.

> Just because in the context of any education in the States or in the UK, we were just getting more and more numbers of students from China. And I felt ill-equipped to teach them because I never been to China. (SS04)

With the increasing number of Chinese students studying outside China, China experience is more valued in host countries or universities, especially for administrative positions. A senior administrator from Canada shared his consideration of taking an administration position in China.

> I would love to gain some more management experience. And also to get some exposure to Chinese higher education because that is really lacking in my curriculum. And I was always told at my home institute that, well, you have so much in your opinion of North American experience. Or this is not really a relevant for us…. What important is really the China and the Asian experience.” (SS01)

Unlike international faculty in the field of science who seek a long-term position in China, participants in the social sciences and humanities view the experience in China as a step toward securing a better position in the West. Therefore, this attitude is more than seeking an adventure in China, but rather gaining added value for further mobility.

Institutional characteristics further influence faculty's decisions to work at South University.

As mentioned earlier, South University is a newly established university that is at the forefront of education reform in China. Several participants mentioned that it is the innovative governance structure such as the PI system (principle investigator system) and the international environment that attracted them to relocate there. Unlike other traditional universities in China, South University adopts the PI system with which international faculty, especially those from the West, are familiar. In this system, faculty members of all ranks have the freedom to build their own research teams without interference from the administration or senior members of the institution. This is greatly appreciated by young faculty and gives them the freedom and autonomy to conduct their own research. One participant expressed his understanding as follows:

> I like the fact that if you are hired as a PI at South University, you are given basically full control of your group. You're given that responsibility. And you are treated with respect and you're supported by the other professors and by the administrators in a department of the university. So I think that's really good. (NS06)

For them to participate in the development of a new university is an exciting thing. An assistant professor of mathematics from Switzerland stated, “That’s fantastic. As one of the first few members of the center, I can have sort more input in the future directions that it goes.” (NS07). This is particular true for the two senior academics in this study who claimed that they were attracted by an opportunity to build new programs and new organizations. The desire to “make a difference” is consistent with the literature on international faculty who work in universities in developing countries in a sense of contributing to an important project (Altbach & Yudkevich, 2016; Rumbley & Wit, 2016).

Discussions

The results of this study reflect the existing literature on push-pull mobility motivations and the emerging new pattern of mobility. With the expansion of higher education and the campaign for world-class universities, the reverse flow of international academics from core countries to peripheral ones is increasing and evident. This study argues that mobility is not merely a personal decision; it is also linked to broader social, political and cultural contexts. Therefore, in the discussion part, we interpret the motivations of academics and the complexity of the emerging trend of academic mobility in China at three levels: macro (state), meso (institution), and micro (individual).

Macro Level

National-level factors that attract global experts from abroad to move to China may manifest themselves in supportive policies and available resources. China's preferential policies for international talent, supported by the booming Chinese economy, make Chinese universities a more attractive place for

international academics to settle for academic work(J. Chen & Zhu, 2020; Q. Chen, 2016). The Peacock Plan of Shenzhen, where South University is located, offers a very generous subsidy for housing and remuneration to high-level international academics, with the highest subsidy being up to RMB 6 million for top-notch talents. As some of the participants in this study revealed that the implementation of the talent programs was an extremely important pulling factor. They wished to make academic success in China with generous research funding support. The rapid increase in diversity and number of international academics forms a virtuous cycle for the case study, which in turn enhances the reputation and popularity of the university in attracting more scholars of non-Chinese origin. This study shows that the function of state policies continue to pose influences on the directions and patterns of transnational academic mobility.

Meso Level

At meso level, institutional factors are related to national policies, but have their own characteristics of the university. Boosting the research profile and public reputation of individual universities drives them to explore their structures and mechanisms to attract international faculty. Supported by China's campaign for world-class universities, renowned research universities have achieved the government's huge investment in research. Some new Chinese universities, like the case study university, took advantage of this opportunity and formed their own institutional characteristics with an academic management system similar to that of the West. This similarity in research management plays an important role for the institution in attracting international academics, as it creates a familiar and comfortable working culture for them. For example, the case study university's PI system provides international faculty with adequate research resources and autonomy to build their own lab and research team, which is the foundation for their research development, but which was often limited prior to their arrival in China due to the effects of austerity in academia in some Western countries. This sense of autonomy was seen as an opportunity for them to explore their potential in research. Furthermore, the adoption of English as a medium of instruction also plays a significant “facilitating element”(Rumbley & Wit, 2016) . Most respondents identified that the international profile of South university, especially using English as work language, exerts an influence on their relocation decisions. It can be argued that although understanding national policies of attracting international faculty is important, the institutional level of analysis is vital since the lives of international faculty are heavily affected by a particular institutional context.

Individual Level

Motivations at the individual levels for academic to move to China vary widely, but as this study shows, the various factors can be grouped into two main categories, namely perceived career opportunities and cultural comfortableness with the Chinese university. The academics of different ages, fields, and nationalities interviewed in this study see their move to China as providing opportunities for their academic development. The study shows that academics in the sciences and engineering value research

resources, laboratories, autonomy to build their own research teams, and consistency with their research interests. Academics in the humanities and social sciences saw the value of experiences in China for their professional development. With the rise of China, the "China experience" is becoming a value added signpost in the career path for certain disciplines and positions. This is especially true for academics in the social sciences and those seeking senior administrative positions at some world-class universities. This is not a direct or typical pull factor for international mobility, but indirectly facilitates the move of academics motivated by their career ambitions. Interest in China is a self-initiated drive. As the English teacher and the social scientist indicated, their motivation is to understand Chinese students and to explore Chinese culture. Some also shared that the value of science in the society attracts them to work in China. The self-directed interest creates a sense of comfort with the potential challenges and local culture and therefore serves as a drive for them. This study suggests that knowledge migrants may not necessarily be motivated to move for economic benefits. Professional prospects and intrinsic rewards have a larger impact on their migration decisions.

Concluding remarks

This study provides firsthand information, based on the perspective of international scholars, to give international audiences insight into the emerging international academic labor market in China. It challenges the center-periphery model and highlights the growing trend of pluralized academic mobility globally. However, this study is primarily limited by its small sample size and limited in one unique international-oriented university in China. Follow-up studies that address these limitations may yield better results.

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4. International Academics in Mainland China: What Do We Know and What Do We Need to Know?

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Contents

- **Background, research gap & research question**
- **Methods**
- **Findings**
  - Definitions of 'international academics in mainland China'
  - Different disciplinary, theoretical and methodological perspectives
  - Demographics and motivations
  - Challenges and expected roles
- **Conclusion and future research agenda**
- **Relevant paper:**
  - Xu, X., Braun Střelcová, A., Marini, G., Huang, F. & Cai, Y. (Under review). International Academics in Mainland China: What Do We Know and What Do We Need to Know?

Background, research gap & research question

- The cross-border mobility of academics is a significant yet under-researched global phenomenon (Rumbley and De Wit 2017). Asia, or the broadly conceptualised 'Global East', has developed several attractive destinations.
- China is becoming another magnet for international academics because of:
  - China's rise as a global science power, recruitment policies offering generous working conditions
  - Local academic culture and lifestyle becoming more Westernised than before
  - Political, institutional and grassroot-level research collaboration initiatives facilitating mobility
- Growing research interest on international academics working in (mainland) China
- Scholarly attention is shifting from the "first cohort": university (language) teachers, short-term visitors, part-time post holders, honorary affiliates, trailing spouses or ethnic returnees to the "new cohort" : non-Chinese nationality, non-Chinese ethnicity, full-time, long-term academic positions (Marini and Xu 2021; Huang 2022).
- However, many research gaps remain due to a lack of unified definitions, methodology & theoretical approaches, leading to a lack of synthesised reviews of published research on the topic.
- **Our research questions:**
  - **What are the major themes in the existing research on international academics in China? What can we learn from them?**

Methods: Review of the literature and empirical evidence

Projects	Case institutions	Participants (international academics)	Datasets	Period	Publications
Project 1	26 universities (diverse profiles)	• Foreign nationality or citizenship • Full-time employment for > 1 year	• > 800 demographic profiles • 38 survey responses • Interviews: 23 academics +14 administrators	2016–20	Huang 2022; Huang and Kim 2022.
Project 2	16 universities + 4 res. institutes	• Europeans by citizenship & ethnicity • Full-time in Chinese academia • Doctoral researchers included	• Interviews with 28 academics • Interviews with 19 experts	2017–18	Braun Střelcová, Cai and Shen, forthcoming
Project 3	15 universities in 12 cities	• Non-Chinese ethnicity & nationality (excl. returnees) • Full-time, long-term employment	• 323 academics and 43 postdocs' dem. profiles • 124 questionnaires • 31 interviews with academics • University policy	2019–21	Marini and Xu 2021.

Findings: Definitions of 'international academics in China'

Type	Type I	Type II	Type III	Type IV
Nationality	Non-Chinese nationality			
Ethnicity	Non-Chinese ethnicity		Chinese and non-Chinese ethnicity	
Job positions	Long-term, full-time academic positions with more than one responsibility in research, teaching and administration	Long-term, full-time academic positions with mainly sole responsibility in research, teaching or administration; part-time or fixed-term faculty members; postdoctoral and doctoral researchers; short-term visiting academics	Long-term, full-time academic positions with more than one responsibility in research, teaching and administration	Long-term, full-time academic positions with mainly sole responsibility in research, teaching or administration; part-time or fixed-term faculty members; postdoctoral and doctoral researchers; short-term visiting academics
Scope of definition	Narrow		↔	Broad

Findings: Disciplinary, theoretical and methodological perspectives

- Interdisciplinary - often a mixture of higher education and international migration literature – clustered around five themes (Braun Střelcová, Cai and Shen, forthcoming):
  - Higher education research, mainly related to internationalisation and mobility (e.g. Wang & Chen 2020)
  - Migration research, China's 'talent attraction' and evolving migration policy (e.g. Zweig et al. 2020)
  - Management studies, expatriation of global academic talents as an understudied phenomenon as opposed to the workers in the corporate sector (e.g. Froese 2012)
  - China studies, on the experiences of foreign social scientists carrying out research in China or with Chinese research partners (e.g. Klotzbücher 2014)
  - Non-scholarly reports, in both news media and other publications (e.g. Science, Nature, FT…)
- Multiple theoretical frameworks:
  - such as capital, push-pull model, social ties, no theories, etc.
- Methodologies:
  - largely qualitative approaches; an increased use of mixed methods

Findings: Demographics

Study	Kim (2015)	Wu and Huang (2018)	Project 1 (Huang 2022)	Project 3 (Marini & Xu 2021)
Sample	41 international 'college-level instructors' (non-Chinese, foreign)	236 full-time international faculty (foreign nationality)	855 full-time international faculty (foreign nationality)	323 full-time international faculty (foreign nationality and ethnicity)
Type	Type II	Type III	Type III	Type I
Case institutions	Universities and colleges	Four leading universities	12 universities, diverse profile	15 research-intensive universities
Location	Beijing	Shanghai	Big cities like Beijing, Shanghai, Hangzhou	12 cities across China
Gender/Sex	Men (27) Women (14)	Male almost 7 times than female academics	Male (82%), female (18%)	Male (77%), Female (16%) Rest N/A
Academic rank	/	Professors (63.3%) Lecturers (15.7%) Associate Prof- (14.4%) Others (6.6%)	Professors (35.3%) Assistant Prof. (17.4%) Associate Prof. (16.0%) Lecturers (11.1%)	Professors (36%) Associated Professors (31%) Assistant Professors (26%)
Nationality/ Citizenship/ Home country	41% from the USA, 34% from Western Europe; other countries	USA (41.9%), HK/MC/TW (15.8%), Canada, Germany, Japan, UK	USA (83), Canada (17), HK (16), TW (14), the UK, Japan, Germany	N/A

Findings: Motivations for relocation

- Professional opportunity is the primary motivation (Chen & Zhu 2020; Farrer 2014; Projects 1, 2 and 3). Participants of all three projects reported seeing China as experiencing unprecedented growth in the academic labour market, offering more favourable work packages and secure opportunities than the often-precarious academic job markets in the US or Europe.
- Cultural connection: often entangled with the professional aspect. Moving to China could mean new cultural adventure, or conducting research in a culturally interesting country (Cai & Hall 2016; Wu & Huang 2018).
- Personal links: all three projects found that some international academics moved to China for family reasons or social networks.

Findings: Challenges

- Professional challenges
  - Power relations (ambivalent position, revered yet mistrusted, Project 1,2,3; Li & Xue 2021)
  - Professional isolation (outsider, 'glass ceiling', 'golden guest', Project 3)
  - Research (e.g. some funding schemes' nationality requirement, Project 3, increasingly strict political ideology esp. in some social science fields, Project 2)
  - Administrative work (language barriers, bureaucracy overload, Project 1,2,3)
  - Teaching (talented students but not active class participation, Project 3)
- Non-professional challenges
  - Cultural integration ('golden bubble'; Project 3)
  - Legal procedures (lengthy regular visa and work permit renewals; Project 2)
  - Living conditions (high costs of living, air pollution, internet censorship; Project 2)

Findings: Expected roles

- In Project 1, international academics reported that they were expected to
  - Enhance the international reputation of their current universities (3.81 out of 5)
  - Yield high research productivity (3.62)
  - Be active in carrying out international activities (3.24)
  - Bridge their current universities and universities of their home countries (2.65)
  - Organise faculty development activities in their current universities (2.76), recruiting more international students (2.65)
  - Undertake any activities that cannot be accomplished by Chinese colleagues (2.65)
  - Teaching language programs for students (1.97)
- Interviews with European researchers (Project 2) echo the findings that some participants see themselves as bridge builders who create links between their Chinese institutions and their global academic networks.

Conclusion and future research agenda

- Our review of existing literature and three recent empirical projects presents major themes regarding the 'new cohort' of internatinoal academics, based full-time, long-term in Chinese institutions
- Differences exist within the group and the heterogeneity suggests a need for further studies.
- Our typological framework of international academics can help avoid definitional ambiguities.
- We invite future research to examine the international academics' multiple identities e.g. through 'intersectionality' (Crenshaw 1989), gender studies etc.,
- New analytical frameworks based on various theoretical insights; more quantitative & mixed methods studies, larger-scale research, longitudinal, bibliometric studies, international comparative studies and systematic reviews,
- The international academics' engagement with knowledge circulation and epistemic justice (Morley et al. 2018; Shen, Xu, and Wang 2021)
- The changing landscape of international mobility. For instance, due to travel and visa restrictions under the pandemic, the population of European researchers in China was reduced by one third (EURAXESS China, 2021). Further challenges include the rise of (neo-)nationalism, geopolitical tensions between China and the Global West and politicisation of research.

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5. Hong Kong Overseas Academics' Intellectual Processes and Outcomes

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Hong Kong Overseas Academics' Intellectual Processes and Outcomes

Li-fang Zhang & Zhengli Xie
The University of Hong Kong

International Workshop:
International Academics in a Global and Comparative Perspective:
Their Work Roles and Contributions

Research Institute for Higher Education
HIROSHIMA UNIVERSITY
Online Presentation
Feb. 6, 2022

Overview

- **Background: Academic Profession in the Knowledge-based Society (APIKS, 2017-18)**
- **Scope of this presentation: research, teaching, and job (dis)satisfaction:**
  - ✓ **Preference for research and teaching**
  - ✓ **Time budget (research and teaching)**
  - ✓ **Efficacy in research and teaching**
  - ✓ **Research agendas**
  - ✓ **Teaching styles**
  - ✓ **Teaching emotions**
  - ✓ **Job satisfaction and job dissatisfaction**
  - ✓ **Research productivity**
- **The remainder of the presentation:**
  - ✓ **A) Concepts and measurement**
  - ✓ **B) Research sample and findings**

Academic Self-efficacy

- **Self-efficacy: individuals' belief in their capacity for succeeding in task accomplishments** (Bandura, 1977)
- **Academic self-efficacy: academics' belief in their ability to succeed in research, teaching, and service** (Zhang et al., 2018)

- **Research efficacy (e.g., "I have no difficulty in carrying out my research plans.")**
- **Teaching efficacy (e.g., "I know how to improvise in response to changing circumstances when I teach.")**

Research Agendas

- **a combination of researchers' strategic problem-solving frameworks and subsequent actions taken to pursue research goals** (Ertmer and Glazewski, 2014)
- **Multi-Dimensional Research Agendas Inventory** (Horta & Santos, 2016)

- ✓ **scientific ambition (Trailblazing-oriented)** ("I aim to be one of the most respected experts in my field")
- ✓ **divergence (Trailblazing-oriented)** ("I look forward to diversifying into other areas")
- ✓ **discovery (Trailblazing-oriented)** ("I find cutting-edge scientific areas more appealing than well-established ones")
- ✓ **collaboration (Trailblazing-oriented)** ("I enjoy collaborating with other authors in my scientific articles")
- ✓ **Conservative (Cohesive-oriented)** ("I prefer safe or stable fields of study")
- ✓ **Convergence (Cohesive-oriented)** ("My expertise is focused on a single scientific area")
- ✓ **tolerance for low funding**
- ✓ **mentor influence**

Teaching styles

- **Preferred ways of using abilities and processing information in teaching contexts (Zhang & Sternberg, 2005)**
- **Legislative style (e.g., "I prefer to allow students to plan an investigation of a topic that they believe is important") and executive style e.g., ("students should learn to follow their teachers' instructions precisely") (Sternberg, 1997)**
- **Thinking Styles in Teaching Inventory (Grigorenko & Sternberg, 1993)**

Emotions in Teaching

- **"socially constructed, personally enacted ways of being that emerge from conscious and/or unconscious judgments regarding perceived successes at attaining goals or maintaining standards or beliefs during transactions" (Schutz, Hong, Cross, & Osbon, 2006, p.344)**
- **Kemper's (1978) Classification of Emotions: Positive and negative**
- **Emotions in teaching: teachers indeed display positive emotions (e.g., love, care pleasure, happiness, satisfaction, and affection for students) and negative emotions (e.g., anxiety, anger, frustration, and helplessness) in teaching (Sutton & Wheatley, 2003)**
- **Emotions in Teaching Inventory (Trigwell, 2009)**

Job Dissatisfaction and Job Satisfaction

- **Job dissatisfaction:**
- ✓ **This is a poor time for a young person to begin an academic career in my field**
- ✓ **If I had to do it all over again, I would not become an academic**
- ✓ **My job is a source of considerable personal strain**
- ✓ **Teaching and research are hardly compatible with each other**

- **Job satisfaction (rating):**
- ✓ **Your current employment situation (e.g., your contract status, salary)**
- ✓ **Your current work situation (e.g., workloads, work environments)**
- ✓ **Your current overall professional environment**

Research productivity

1	☐☐	Scholarly books you (co)authored
2	☐☐	Scholarly books you (co)edited
3	☐☐	Chapters published in academic books
4	☐☐	Articles published in peer-reviewed international journals
5	☐☐	Articles published in domestic academic journals
6	☐☐	Papers presented at scholarly conferences
7	☐☐	Patent or licence secured on invention(s)
8	☐☐	Other (please specify).....

Participants (APIKS): N = 525

Language groups		Cantonese	Mandarin	Overseas	Total
Gender	Male	171	76	88	335
	Female	97	57	35	189
Age	Median	44	40	48	44
	Range	28-71	28-67	30-76	28-76
Academic rank	Senior	140	48	69	257
	Junior	129	85	54	268
Academic discipline	Non-STEM	133	69	76	278
	STEM	136	64	47	247
Types of employment	Tenured	119	43	45	207
	Non-tenured	150	90	78	318
Total		269	133	123	525

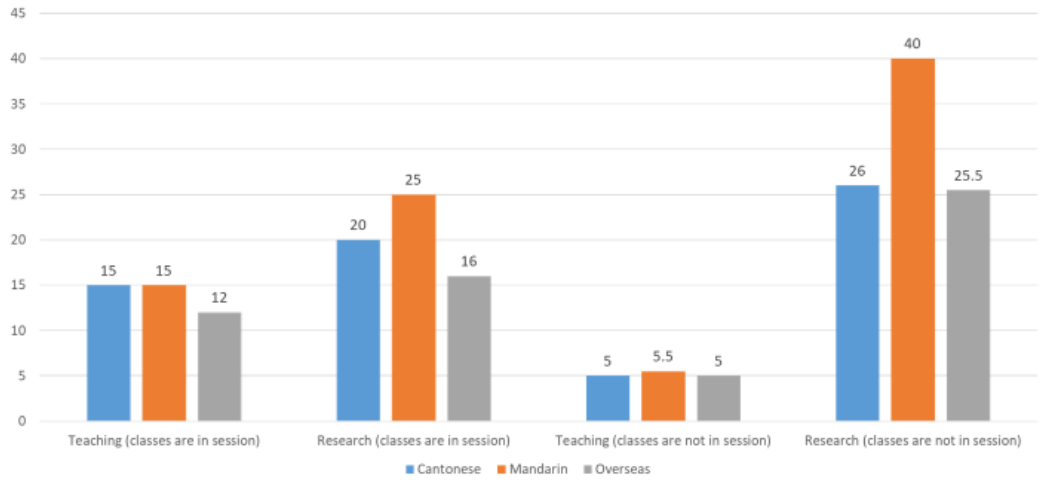
Preferred research and teaching activities by language groups

	Research vs. Teaching		Research vs. Towards teaching		Research vs. Towards research	
	Coeff.	OR	Coeff.	OR	Coeff.	OR
Cantonese	.58	1.78	-.83*	.44	-.35	.71
Mandarin	2.34**	10.38	1.65**	5.19	.15	1.17

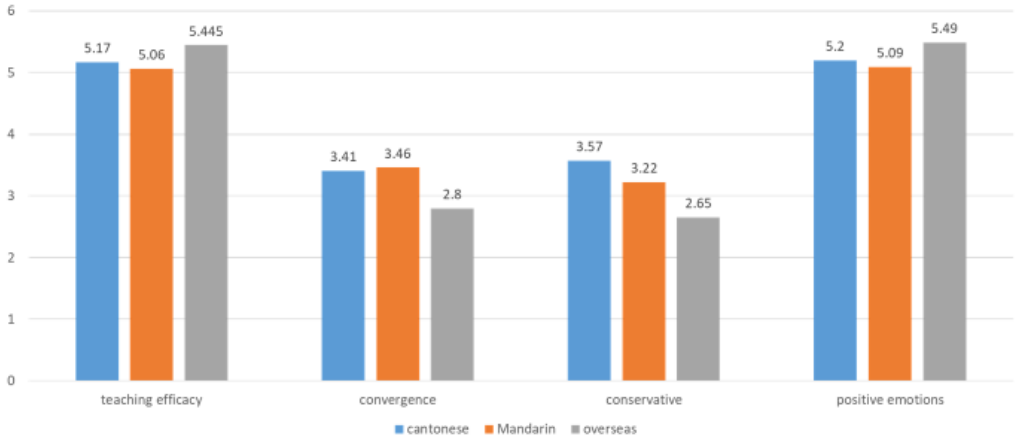
	Towards research vs. Towards teaching		Towards research vs. Teaching		Towards teaching vs. Teaching	
	Coeff.	OR	Coeff.	OR	Coeff.	OR
Cantonese	-.48	.62	.93*	2.53	1.41**	4.08
Mandarin	1.49*	4.46	2.19**	8.91	.69	2.00

- Collectively, compared with overseas academics, Cantonese academics preferred 'towards teaching', and Mandarin academics preferred 'towards research' and 'research'. Overseas academics preferred "teaching".

Hours per week (teaching and research; self-reported)



Differences in academic self-efficacy, research agendas, and emotions in teaching



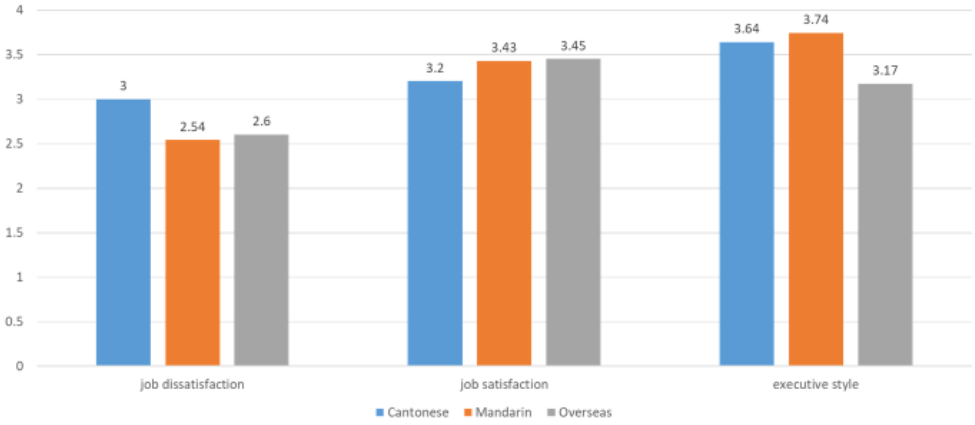
F = 6.07**
Overseas > Mandarin
Overseas > Cantonese

F = 8.59***
Overseas < Cantonese
Overseas < Mandarin

F = 18.60***
Overseas < Cantonese
Overseas < Mandarin
Mandarin < Cantonese

F = 5.25**
Overseas > Mandarin
Overseas > Cantonese

Differences in job dissatisfaction, job satisfaction, and teaching styles



F = 13.24***
Cantonese > Mandarin
Cantonese > Overseas

F = 4.31*
Overseas > Cantonese
Mandarin > Cantonese

F = 9.46***
Overseas < Cantonese
Overseas < Mandarin

Research productivity

1	☐☐	Scholarly books you (co)authored
2	☐☐	Scholarly books you (co)edited
3	☐☐	Chapters published in academic books
4	☐☐	Articles published in peer-reviewed international journals
5	☐☐	Articles published in domestic academic journals
6	☐☐	Papers presented at scholarly conferences
7	☐☐	Patent or licence secured on invention(s)
8	☐☐	Other (please specify).....

- **No significant difference was found in research productivity based on the three language groups.**

Within the overseas group

- No significant difference was identified in the aforementioned variables (i.e., academic self-efficacy, research agenda, emotions in teaching, job dissatisfaction, job satisfaction, and teaching styles) by gender, tenure status, academic rank, length of service, and academic discipline.

Summary – Overseas Academics

- Strong preference for teaching
- Reported the least time for teaching and research (when classes are in session)
- Least cohesive/conforming in research agendas
- Least conservative in teaching styles
- Most positive in teaching emotions

- Lower level of job dissatisfaction (than local academics)
- Higher level of job satisfaction (than local academics)

6. International Faculty Members in China, Japan, and Korea: Their characteristics and the challenges facing them[2]

Futao Huang and Yangson Kim (Hiroshima University, Japan)

Introduction

When the medieval European universities emerged, there was a mobility of faculty members and scholars across boundaries. For example, the Universities of Paris and Bologna attracted many faculty members and scholars from other parts of Europe (De Ridder-Symoens, 1992). There is little doubt that the cross-border movement of faculty members and scholars played an important role in transferring the ideas and practices of the University of Paris and Italian universities to England, other parts of Europe, regions, and continents (De Vries, 2010). As a former British colony, it is no surprise that the formation of modern Australian universities was also significantly impacted by UK institutional and ideological patterns and faculty members who moved from England to Australia at the time (Pietsch, 2013). Indeed, many Asian countries, including Japan, China, and Korea, established their modern universities or higher education systems in the nineteenth century by basically modeling on prevailing Western ideas and standards, especially Germany, France, the UK, and the USA. International activities such as dispatching domestic students and researchers to these Western countries, introducing their academic norms, standards, textbooks and curriculums, and inviting faculty members from these countries to home countries played a decisive role in the process of modernization of higher education in the region, as Meiji Japan most strikingly illustrated from around 1868 (Altbach & Selvaratnam, 1989).

Like many countries in North American and Europe, as well as other continents, accepting international faculty members has constituted an increasingly prominent and important part of the internationalization of higher education in China, Japan, and Korea since the 1990s. Meanwhile, it has also been conceived as one of the effective and significant means of reforming national higher education systems and especially enhancing the quality and international competitiveness of national higher education systems in the three countries. This chapter is primarily concerned with discussing the demographic profiles of inbound international faculty members being hired in universities in the three countries and the challenges they faced in the hosting countries. The following section briefly introduces the national contexts and policies in China, Japan, and Korea. In the third section, prior research on this

[2] This study will be published in Cláudia S. Sarrico, Maria J. Rosa, and Teresa Carvalho (eds.). (2022). Research Handbook on Academic Careers and Managing Academics in Edward Elgar.

topic is reviewed. The fourth section explores the main changes in international faculty's size, and challenges they were confronted with. The chapter concludes by presenting the main findings from this study and the implications derived from the study.

Regarding the definition of international faculty members, some previous research uses foreign-born status as an indicator of international faculty. For example, a recent study defines international faculty as academics who hold appointments in countries where they were not born and/or where they did not receive their first post-secondary degree. In most cases, they are not citizens of the country in which they hold their academic appointment (Yudkevich and Altbach, 2017). Primarily because of national laws and regulations in the three case countries, the phrase of international faculty members in this study refers to faculty members who are non-national citizens or foreign passport holders.

National contexts and policies

China

As early as the late nineteenth century, when China began to establish its modern higher education system by learning from Western educational ideas, in addition to sending out students and scholars abroad, it also hired many foreign experts and scholars to work in China. After the People's Republic of China was established in 1949, the new government invited lots of Soviet educators, and specialists in various fields came to China. Although all of them returned by 1960 due to the Sino-Soviet ideological conflicts, they made a remarkable contribution to China's socialist construction, restructuring China's higher education system, and training university staff (Shen, 2009). Since 1978 when China implemented the reform and open-door policy and the English language became one of the university-wide subjects, foreign faculty, especially those from English-speaking countries, were hired at Chinese universities as language teachers. With the massification of China's higher education and an increased emphasis on internationalizing China's higher education, the number of these foreign language staff has expanded rapidly.

Further, the implementation of several national projects such as the 985 Project in 1998, and the Double World-Class Project in 2017 has required individual universities, especially those included in the two projects to hire more numbers of international faculty members, scholars or scientists who conduct research and provide graduate programs in professional fields. This is because all these projects aim at improving China's higher education and research quality, internationalization and global competitiveness, building world-class universities, and establishing disciplines that are first-class globally. For example, similar to the 985 Project but much more ambitious, the key goal of the Double World-Class Project in 2017 is to build 42 world-class universities and approximately 456 world-class

disciplines in 95 universities by mid-century and hiring global talents is considered to be one of the most effective and quickest ways to achieve the goal. In addition to various projects of attracting high-level talents and scientists from abroad to increase their international competitiveness of teaching and research at the institutional level, main national projects alone include One Hundred Talents Project of 1994, Chang Jiang Scholars Program of 1998, the Thousand Talents Plan of 2008, Recruitment Programs of Young Global Experts of 2011, and the Ten Thousand Talents Plan of 2012 (Peters and Besley, 2018).

In addition, the emergence and expansion of Sino-foreign collaborative programs and universities in China have also led to a quick rise in the number of international faculty members. Similar to transnational higher education institutions (HEIs), these institutions and programs are typically called *Zhongwai Hezuo Banxue* in Chinese, meaning they represent co-operation between Chinese universities and foreign partners. Some of them were dispatched by foreign partner universities to Chinese campuses. Others are directly hired by these Sino-foreign jointly collaborative universities. For example, NYU Shanghai is China's first Sino-US research university and the third degree-granting campus of the NYU Global Network. It was founded in 2012 by New York University and East China Normal University with the support of the city of Shanghai and the district of Pudong. It hired over 200 international faculty who came from more than 25 countries (NYU Shanghai, 2020).

Japan

As stated above, a large number of foreign experts, scholars, and professionals from the UK, the USA, Germany, and France were also invited to work in Japan in the late nineteenth century as Japan made efforts in establishing a modern society and higher education system based on Western models. Soon after WWII, the introduction of the US general education ideas and part of its educational programs to Japanese universities required them to hire international faculty, especially those from English-speaking countries, to provide foreign language programs for Japanese students. Since the 1990s, in line with an emphasis on the provision of English language programs for students, new policies and strategies aiming to improve the level of internationalization of Japan's HEIs and their global competitiveness have been developed. For example, in 2009, the Japanese government launched the "Global 30" project as a follow-up to the national strategy to accept 300,000 foreign students by 2020. The main goal of this project is to elevate the international competitiveness of Japanese tertiary education while fostering students and researchers on internationalized campuses so as to give them the ability to play active roles at a global level. In order to achieve the goal, 13 universities, including seven national and six private, were selected to play a central role in implementing the program. With additional funding from the central government, these universities are required to accept many more international students as well as to develop new English-taught degree programs (MEXT, 2009).

In 2014, the Japanese government issued another national project: the "Top Global University

Project." This project aims to enhance the international competitiveness of Japan's higher education and create a more favourable environment to produce capable and talented graduates. Similar to the Global 30 project, the project also aims to attract more foreign faculty and students, while also placing more Japanese universities at the top of global rankings. Top Global (also referred to as "Super Global") runs from 2014 to 2023. It is administered and funded by the Ministry of Education, Culture, Sports, Science, and Technology in Japan (MEXT). The funds can be used to hire international or internationally-educated faculty, establish internationally-oriented undergraduate curricula for undergraduate degree programs, and student support. Building on MEXT's 2009-14 Global 30 project, there are two types of institutions in the project. Type A (Top Type, 13 universities) is for world-class universities that have the potential to be ranked in the top 100 according to global university rankings. Type B (Global Traction Type, 24 universities) is for innovative universities that will continue to lead the internationalization of Japanese society, based on continuous improvement of their current internationalization efforts. It is reported that the central government will allocate 7.7 billion JPY annually for selected universities for 10 years (MEXT, 2016).

Korea

Since the meaning of internationalization of higher education has diversified theoretically for scholars and practically for governments, there have also been quite different approaches to policy initiatives by country. In particular, internationalization of higher education in many Asian countries, including Korea, tends to be interpreted as the concept of increasing its quality and international competitiveness (Byun & Kim, 2011). Moreover, the leading actor in this form of internationalization is the government rather than the higher education institutions (HEIs). In other words, the early-stage motives did not come from universities, but from the governments at the national level, which is a top-down approach. Although many Korean universities have tried to become more internationalized with strategic efforts on the institutional level based on their agreement with the necessity of internationalization and these policies, the central government has been taking a substantial role in internationalization, particularly in recruiting international academics.

The policy initiatives for the internationalization of Korea have had several dimensions in the last three decades. Baek and Kim (2016) have categorized four significant trends: 1) the exchange of students, 2) the mobility of academics, 3) exchange of educational programs, and 4) the mobility of educational institutions. Most of the policies of internationalization in Korea have been primarily focused on student mobility; in particular, how Korean universities can become attractive to international students because the number of outbound domestic students studying abroad is almost two times higher than inbound international students. Therefore, attracting international academics and faculty members was of relatively less concern in the first stage due to high costs and necessary strategies with long-term

perspectives. Moreover, in a broad perspective, quantitative expansion and qualitative improvement should also be considered together. In 2008, World Class University (WCU) started as a project that consists of three different types of support initiatives for recruitment of international faculty members in Korean universities: Type 1, the establishment of a new major/department; Type 2, inviting international academics to existing departments; and Type 3, inviting top-tier international academics. Although it is meaningful as the policy's first attempt to attract international academics at the national level, because of the project's five-year duration starting from 2008, it has been hard to guarantee the continued enormous funding and tremendous research environment for the academics. Accordingly, 140 research teams in 33 universities were funded 825 billion won based on a competitive evaluation selection. As a result, 342 international academics (as of 2011, 206 for Type 1, 72 for Type 2, and 64 for Type 3) were invited, and 278 academics (Type 1 and Type 2) among them were affiliated with Korean universities as full-time faculty members (NABO, 2011).

After the WCU project (2008–2012), the Brain Korea 21 Plus (BK 21 Plus) project was launched in 2013, integrating the WCU and Brain Korea 21 projects. However, the recruiting of international academics was accepted as only a small part of the BK 21 Plus project, whereas the primary purpose of the WCU project was providing direct funding to employ international academics. One of the evaluation indicators of the BK 21 Plus project is the rate of full-time foreign faculty members in the project team, which can consist of a department (or several) or a college (or a graduate school) in a university. In the selection process and the mid-term evaluation of the project, universities should make an effort to increase the number of full-time international faculty members as an indicator to be evaluated and selected to keep receiving national funding for the project.

Moreover, in the reputed university ranking by Joongang-Ilbo, which is one of the biggest newspaper companies in Korea, internationalization was considered a critical area of ranking evaluation. The weight of international faculty members was the highest (a maximum of 20 points) compared to the weight of English-medium instruction and the weight of international students until 2014 (Joongang-Ilbo, n.d.). Currently, the rate of international faculty members is five out of 300 points in total. However, it is still regarded as a critical indicator of evaluation, as some indicators are excluded (e.g., the rate of English-medium instruction from 2015). It is not only valued in the domestic ranking; the Times World University Ranking also has a proportion of international staff (2.5%) as an indicator of the International Outlook area. In that sense, it is hard to ignore the far-reaching influence of evaluation mechanisms on the expansion of international academics in Korean universities that want to confirm their competitiveness through university rankings.

LITERATURE REVIEW

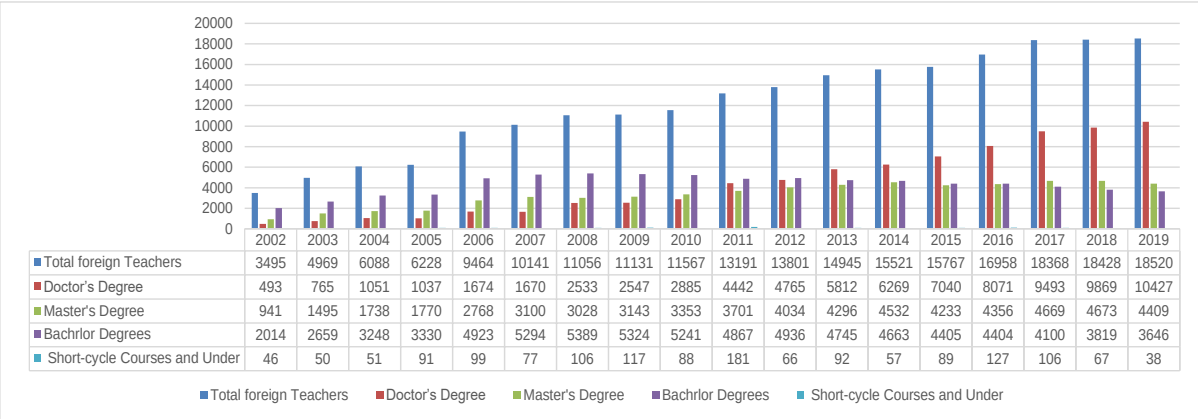
Compared to numerous research in the international mobility of students, much less research has been conducted in the cross-border movement of faculty members. As for international faculty in the East Asian and Southeast Asian region, Huang's research outlined an overview of international mobility of students, academics, educational programs, and campuses, focused on policy changes and the actual situation of cross-border movement of international faculty in China, Japan and Korea (Huang, 2016). Among the previous studies in Japan, as early as 1980, Kitamura depicted key characteristics of foreign teachers, their academic activities, motivations of coming to work in Japanese universities based on a national survey (RIHE, 1980). Yonezawa and Ishida (2012) analyzed international faculty's activities, behaviors, and perceptions of Japan's internationalization of higher education. Huang and his team investigated demographic profiles, motivations, teaching, and research activities of international faculty and challenges they faced based on a national survey of full-time international faculty at Japanese universities in 2017 (Huang, 2018a, 2018b, 2018c; Huang et al., 2019). The latest research on this topic is a collection of country case studies, including Australia, China, and Japan (Huang & Daizen, 2020). This study made a comparative study of international faculty members, focused on their recruitment, striking characteristics, main academic activities, and perceptions of internationalization of higher education and the academic labor market based on the three countries as cases. In China, the research jointly undertaken by Wu and Huang (2018) explored the main characteristics and motivations of international faculty who were hired in several universities in Shanghai, China by discipline, age, gender, and so forth. More specifically, it investigated the individual, educational, and professional characteristics of international faculty, their motivations for coming to work in Shanghai. Other prior research in international faculty is concerned with their motivations and actual situation of working in China (Chu, 2013; Kim, 2015). As Korea's incentives to attracting international faculty seem to be later than both Japan and China, some researchers argued that international faculty appeared to meet with more difficulties in Korea (Gress & Ilan, 2009; Kim, 2016).

TRENDS AND REALITIES OF INTERNATIONAL FACULTY IN THE THREE COUNTRIES

China

Although no national statistics of all international faculty members and scientists working in China are available, the Ministry of Education issues a national table of foreign teachers who are hired at Chinese HEIs every year (Figure 1). Partly this is because all university students in China are required to learn the English language as one compulsory subject and the number of language teachers is relatively easier to be gathered at a national level. These foreign teachers are basically hired based on the national-level agency that is specifically in charge of inviting and recruiting international faculty members to come to China

and work in Chinese HEIs based on fixed terms. As a large number of them are employed at Chinese HEIs as language teachers, the phrase "foreign teacher" is mostly used as an official title for them which is one category of various academics, experts, scientists moving from foreign countries to work in China. Those who are hired by individual HEIs based on various projects or college or faculty-wide budgets are not included in Figure 1. Therefore, there should be more international faculty members working at Chinese HEIs. For example, those who were invited and employed in individual universities and research institutes as specially-appointed professors and scientists based on various national projects and institutional projects are not publicly available.



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total foreign Teachers	3495	4969	6088	6228	9464	10141	11056	11131	11567	13191	13801	14945	15521	15767	16958	18368	18428	18520
Doctor's Degree	493	765	1051	1037	1674	1670	2533	2547	2885	4442	4765	5812	6269	7040	8071	9493	9869	10427
Master's Degree	941	1495	1738	1770	2768	3100	3028	3143	3353	3701	4034	4296	4532	4233	4356	4669	4673	4409
Bachrlor Degrees	2014	2659	3248	3330	4923	5294	5389	5324	5241	4867	4936	4745	4663	4405	4404	4100	3819	3646
Short-cycle Courses and Under	46	50	51	91	99	77	106	117	88	181	66	92	57	89	127	106	67	38

Figure 1 Changes in foreign teachers at Chinese HEIs

Source: MoE (2019). *教育统计数据*「Educational Statistics」. Retrieved from http://www.moe.gov.cn/s78/A03/moe_560/jytjsj_2019/ (in Chinese).

As shown in Figure 1, the number of foreign teachers at Chinese universities expanded rapidly between 2002 and 2019. For example, the number of foreign teachers increased from 3,495 in 2002 to 18,520 in 2019, growing by five times in the period. Further, not only did the size of foreign teachers grow, but also the number of foreign teachers with doctoral degrees increased steadily. For example, there were only 393 doctoral- degree holders among foreign teachers in 2002, the number increased to 10,427 in 2019, constituting over half of the total foreign teachers. By academic degree, the largest number of foreign teachers was those with bachelor degrees (2,014), followed by those with master's degrees (941), and those with doctoral degrees (493) in 2002. In contrast, those with doctoral degrees (10,427) became the largest group, followed by those with master's degrees (4,409), and those with bachelors (3,646) in 2019. It suggests that China made good progress in attracting and hiring foreign teachers with quality from the perspective of academic degrees.

In order to have a better understanding of international faculty at Chinese universities, Huang's team has investigated personal, educational and professional information on international faculty hired in 12 research-intensive universities located in big cities such as Beijing, Shanghai, Hangzhou, etc. since

2017. By looking at the homepages and other publicly available sources of approximately 14,800 full-time faculty members in these universities in July - August 2017, the research team collected the relevant data of 855 faculty who were considered to be international faculty by name. The data on their personal, educational, and professional characteristics, especially the nationalities or citizenships of these faculty members, were confirmed via e-mails and other social media. Despite incomplete data, it may present a fuller portrait of international faculty at a dozen of research-intensive universities in China.

Table 1 Characteristics of international faculty in 12 Chinese research universities

Gender	Male	484	82%
	Female	106	18%
Academic rank	Professor	225	35.3%
	Associate professor	99	16.0%
	Lecturer	71	11.1%
	Assistant professor	111	17.4%
	Other	131	20.6%
Discipline	Humanities	48	6%
	Social sciences	445	54%
	Natural sciences	140	17%
	Engineering	184	22%
	Medical science	9	1%

Source: Based on Huang's investigation in 2017.

By gender, there were far more numbers of male faculty (484 or 82%) than female faculty (106 or 18%). One of the most important reasons for it is that the vast majority of these international faculty were not hired as non-language teachers for undergraduate students in their institutions. As mentioned above, normally, the profiles of foreign language teachers were excluded in Table 1; in most cases, only the information of those who worked in professional schools or colleges was gathered and analyzed. By academic rank, the largest number of international faculty was professors (35.3%), followed by those assistant professors (17.4%), associate professors (16.0%), and lecturers (11.1%). The category of Other means those who worked as technical experts, senior researchers that are decided by individual universities, and those who do not belong to the typical academic line of professor, associate, lecturer, and assistant professor. By discipline, the largest number of them came from Social Sciences (54%) such as management, international business, trade, and economics, followed by those in Engineering (22%), Natural Sciences (17%), Humanities (6%), and Medical Science (1%). The data from the 12 case universities reveals that more numbers of international faculty were employed in "soft sciences" than "hard sciences". By destination of earning final degrees, among 590 valid respondents, only 6 % or 25

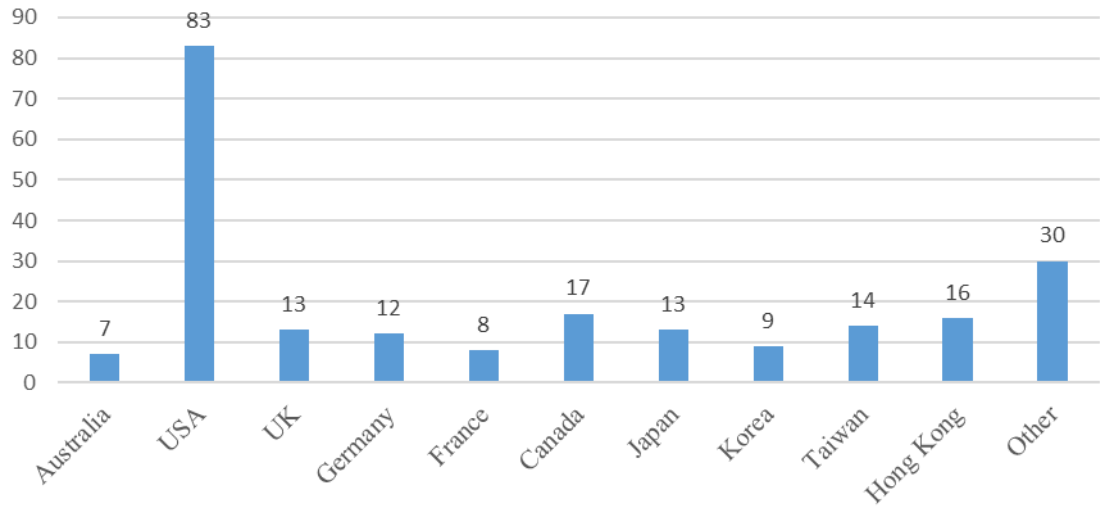


Figure 2 Numbers of international faculty in 11 Chinese universities by nationality

Source: Based on Huang's investigation in 2017.

Table 2 Profiles of interviews

University	Location	Type	Interviewees
01	Beijing	Research Uni.	Professor A from Canada in School of Humanities
			Professor B from the UK in School of Medical Sciences
02	Southeast	Local public Uni.	Associate professor C from the USA in Engineering
03	Shanghai	Research Uni.	Professor D from the USA in School of Mechanics
04	Northeast	Research Uni.	Professor E from the USA in School of Material Science
05	Northeast	Research Uni.	Professor F from the UK in School of Sciences
06	Central China	Local Public Un.	Professor G from the USA in School of Life Sciences
07	East China	Sino-foreign collaborative university	Associate professor H from the UK in School of Business

Source: Based on Huang's interviews in 2015-16

of them received their final degrees from Chinese universities. In contrast, as high as 94% or 424 of them obtained their final degrees from universities outside China, mostly from their home countries. By nationality, as shown in Figure 2, among the total 139 valid data, except for Other, the largest number came from the USA (83), followed by Canada (17), Hong Kong (16), Taiwan (14), the UK and Japan (13), and Germany. Clearly, the number of international faculty from English-speaking countries made the largest share of the total in the case universities. Namely, the number of those coming from English-speaking countries, especially from North America, formed the largest share of the totals.

Before the demographic profiles and educational, professional information on international faculty in these Chinese research universities was gathered and analyzed, Huang conducted a number of interviews with international faculty at some Chinese research universities from August 2015 to March 2016 (Huang, 2017). These interviews were carried out in Chinese, English, and Japanese languages with a common interview guideline, focused on their personal background, motivations of coming to China and their work roles, etc. The time for each interview lasted for around 30 minutes to one hour, depending on interviewees' convenience. All the interviews were recorded and coded. As the largest number of international faculty members at the case universities came from English-speaking countries, the main characteristics of the interviewees who only came from English-speaking countries are discussed (Table 2).

Regarding the main challenges facing international faculty at Chinese universities, although no significant differences could be identified between them in terms of their disciplines, affiliations, and nationalities due to a small number of interviewees, they can be summarized into the following four aspects.

Firstly, almost all the interviewees complained about bureaucratic administrative procedures and difficulties in dealing with renewing visas, income taxations, and other issues that are not relevant to teaching or research activities. For example, some of them pointed out the following problems they met with.

> *"I have to renew my visa every year because of my foreign citizenship and contract here. It is quite troublesome because you have to do lots of paper-work. Since I am hired as a tenured professor, it is hoped that the relevant national-level visa renewal system could be improved."* (H)

> *"I came to this university with my family. My son is a six-year pupil in a local primary school, but we would come back in the future. We cannot find any international schools in this area. My wife is very worried about this. Perhaps she would take my son to leave China and send him to a local middle school in my home city."* (E)

Secondly, it seems that a big gap exists in the level of internationalization between the sector of

university administration and that of academic sector. Despite some universities developed ambitious goals of internationalization of higher education such as expanding the number of inbound international students and faculty members, and trying to creating international campuses, some interviewees complained about how hard they deal with administrative responsibilities, administrative meetings and even administrative staff. Many of them admitted that they get better salaries and treatment than their previous affiliations, but they are not satisfied with some governance arrangements related to administrative meetings and ambiguous regulations.

"*As I am invited to work here based on 'the One Hundred Talent Project, my salary is much higher than my Chinese colleges. Besides, I have been allocated an additional research grant and other research allowances, as well as a good team working for my project. I am quite satisfied with the working and employment situation here. But I go to the administrative building, that is a totally different world. People there are polite to you, but you could hardly communicate with them because of language problem and more importantly, they do not want to take any responsibility for handling your problem. They always ask me to other department of administration or just ask me to discuss with my dean or director of department of international and foreign affairs.*" (D)

"*Almost no English in administration, no matter how these administrative documents and regulations are important and relevant to my promotion, salaries, application for projects or other academic matters. Either you ask your students to help you or you translate them into English by yourself via virtual dictionaries or other means."* (A)

"What I cannot understand is that we are asked to fill out a lot of forms and supply personal, educational, and other academic information including the number of academic publications, obtaining prizes, and external research grants, etc. and almost every time there is a very tight deadline of submission of these forms and information. They do not tell me for what purpose they ask to do these paper work, neither do you know how they would use your personal information. What is worse, sometimes you are asked to provide similar information to different administrative departments in my university. " (G)

Thirdly, even at a departmental level, some of them have language problem as they do not understand any Chinese. One of the reasons is that some international faculty members were recruited to concentrate on doing research and making publications in international indexed journals, but in some cases, they are also asked to participate in various academic and administrative meetings in their affliations. One of the intevriewees mentioned that

"*I do not have to worry about research funding, facilities, or supportive systems here. But sometimes you are asked to attend various meetings because you are professor and you have graduate students. Although sometimes they arranged some graduates or young faculty to translate important points for me, I still could hardly understand what they discussed in most of these meetings. I wonder if I could be exempted from attending these meetings. But it seems to be difficult.* " (C)

Finally, some overseas Chinese scholars are worried about their relationships with their colleagues because they could enjoy more favorable working condition and better pay for their academic activities even though they were graduated from the same universities as their Chinese colleagues. This made them suffer stress from their work and communication with their Chinese colleagues as they are expected to yield higher research productivity and produce and train more graduates with quality than their Chinese colleagues. For example, one of the interviewees who claimed that they returned to China after working in US universities and obtained US nationality because of self-actualization.

"*As I am invited to work here based on 'the One Hundred Talent Project, my salary is much higher than my Chinese colleges. Originally, I thought I could devote my full time to research activities here. However, I am asked to publish at least one research paper and one co-authored paper with one of young faculty members here in any of so-called SCI journals each year. Besides, I am asked to help doctoral students here to find supervisors in the US leading universities and accept them to do research in the USA at least for one year. In addition, it is my duty to organize international conferences, and invite famous professors from the US universities to undertake academic collaboration with my university or my college. I feel that I have to be involved in teaching, research and other administrative activities. I feel very exhausted and stressful.* " (F)

Japan

As noted earlier, the implementation of the *Special Measures Act for the Appointment of Foreign Staff at National and Public Universities* by the Japanese government in 1982, and recent national strategies and projects that aim at attracting more global talents have facilitated a fast growth in the number of international faculty in Japan. As Figure 3 indicates, there was a rapid growth in full-time international faculty from 1980 to 2018. Compared to 1979, when there were only 940 full-time international faculty (0.9 % of all faculty), as of 2018, its number amounted to 8,609 (4.6% of all faculty) (MEXT, 2019).

Further, the existing research also reveals that the composition of international faculty has become more diversified in terms of their work roles and responsibilities. For example, in addition to both teaching and research, international faculty are also strongly expected to undertake any activities which cannot be accomplished by Japanese colleagues, especially help enhance the international reputation of

their current universities. Three broad types of international faculty could be practically identified, and which differ according to their professional roles within their institutions. Type I consists of both Chinese and Korean nationals; Type II is made up of both American and British faculty; Type III refers to the remaining international faculty with diverse nationalities or citizenships. As for their work roles, Type I shows more interest in and devotes more time to research. This type could be considered as research-intensive international faculty. Type II shows a preference towards and concentration more on language teaching. Therefore, they represent teaching-centered international faculty (Huang, 2018a).

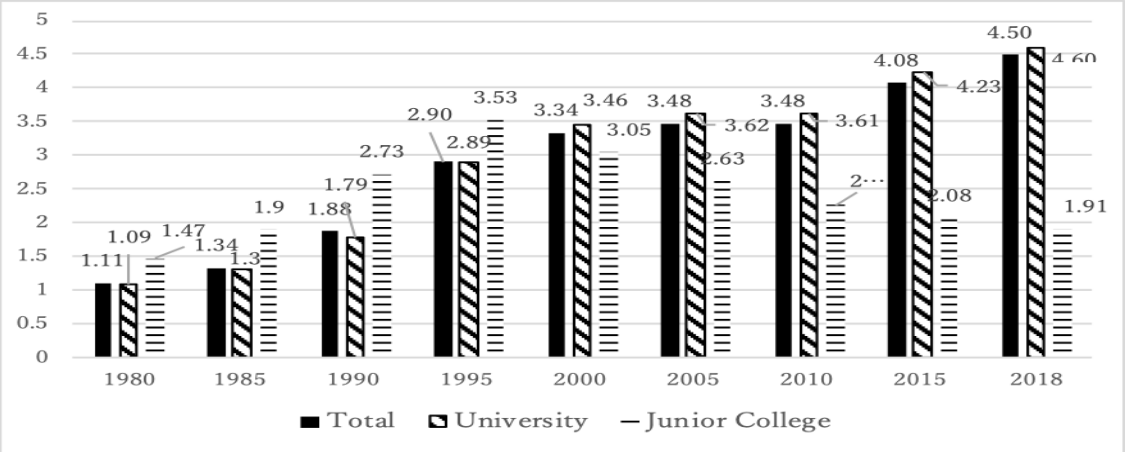


Figure 3 Changes in the proportion of full-time international faculty at Japanese universities

Source: MEXT (2019). *文科統計要覧* [Statistical Abstract, 2019]. Retrieved from https://www.mext.go.jp/b_menu/toukei/002/002b/1417059.htm (in Japanese).

With regard to the various challenges facing international faculty, according to the previous research (Huang et al., 2019), some of the most noticeable challenges were among junior international faculty, especially international lecturers and assistant professors, many of whom had a negative evaluation of the current immigration policy and the opening of Japan's academic market, their relationships with local faculty, the meaning of hiring international faculty in the internationalization of Japanese universities, and their work and employment situations and overall professional environment. Compared to senior faculty, the great difficulties that have been additionally experienced by international junior faculty at least include unstable employment, less research funding and salaries, increased teaching and research workload, uncertain career prospects, and perhaps struggling for survival in a more competitive circumstance. Further, compared to both Chinese and Korean faculty, American and British faculty members appear to have more negative responses to Japan's current immigration policy and their relationships with local faculty. In addition, research in international faculty in Japan conducted by Brotherhood et al (2020) indicated a pattern of disillusionment with their role in internationalization, as many perceived themselves to be tokenized symbols of internationalization rather than valued actors

within it. Many international faculty who were interviewed identified various barriers that prevented them from participating in the academic “mainstream” and confined them to peripheral roles.

Korea

On top of the central government policies and evaluation mechanisms through national project funding and rankings, universities in East Asia competitively attract international academics as one of the strategies for internationalization to enhance their global reputations (Byun et al., 2013; Huang, 2009; Shin, 2018; Yonezawa & Shimmi, 2015). In the same vein, Korean universities have made a great effort to recruit more international faculty members in order to raise their international and domestic reputations in university rankings (Jambor, 2009). However, from the late 2010s, the numbers and rates of international faculty members in Korea have been stable, with the same trend of stagnation or decreased numbers of full-time faculty members.

According to Brief Statistics on Korean Education (MOE, 2019), while the number of international faculty members increased until 2017 and has been quite stable, with a slight decrease since 2017, the rate of international faculty members stopped increasing from 2010, with the total percentage of full-time faculty being 6.7%. Table 3 shows the changes in ratios and numbers of international teachers in universities and junior colleges, which are the two main types of tertiary education in Korea. As of 2019, 4,585 international faculty members are employed in universities, which is 89.5% of the total international full-time faculty members. On the other hand, only 8.7% are working at junior colleges, the second-largest type of higher education institution in Korea.

With the increase in the number of international faculty members, the diverse backgrounds of international faculty members are employed in Korean universities. The most recent data collected in the second half of 2019 shows that the 4,585 full-time faculty members in universities are from 93 countries and regions. According to Figure 4, international faculty members from English-speaking countries (the United States, Canada, the United Kingdom, etc.) constitute more than 46% of all members, followed by Northeast Asian countries (China and Japan: 11%), India (4%), and so on. One interesting point of this figure is that the second-largest group of international faculty members is ethnic Koreans born abroad (17%), who have come from 19 countries. They are mostly used to Korean culture and language, physically appear Korean, and some of them had been educated in Korea for a long time; however, their nationality is not Korean. Therefore, universities decide to recruit international faculty members from this group as an easy way to increase numbers despite criticism that their interest is only in an increasing number or ratio for evaluation and ranking purposes. Moreover, 72.2% of the 772 international members in this group are Koreans from the United States. When it comes to being a separate group, they are more numerous than international members from Canada. Therefore, it is quite clear that too much of the composition of international faculty members has been centralized around English-speaking countries,

especially the United States, although the diversity of these countries makes them desirable to pursue as further direction

Table 3 Numbers and Rates of International Faculty Members by Year

		2000	2005	2010	2017	2018	2019
Higher Education	**No. of Full-Time Foreign Faculty**	**1,373**	**2,131**	**4,957**	**5,528**	**5,441**	**5,126**
	No. of Full-Time Faculty	**57,632**	**66,862**	**77,697**	**90,902**	**90,288**	**89,345**
	Rate	**2.4**	**3.2**	**6.4**	**6.1**	**6.0**	**5.7**
University	**No. of Full-Time Foreign Faculty**	**1,021**	**1,671**	**4,084**	**4,934**	**4,876**	**4,585**
	No. of Full-Time Faculty	**42,483**	**50,432**	**61,020**	**73,326**	**73,081**	**72,208**
	Rate	**2.4**	**3.3**	**6.7**	**6.7**	**6.7**	**6.3**
Junior College	**No. of Full-Time Foreign Faculty**	**239**	**320**	**708**	**492**	**476**	**444**
	No. of Full-Time Faculty	**11,707**	**12,027**	**12,530**	**12,804**	**12,584**	**12,327**
	Rate	**2.0**	**2.7**	**5.7**	**3.8**	**3.8**	**3.6**

Source: MEXT and KEDI (2019). Brief Statistics on Korean Education (p. 47).

Note 1 Full-time foreign faculty rate = (number of full-time foreign faculty/total number of full-time faculty)×100

2 The full-time faculty numbers for universities include the full-time faculty members in the graduate schools

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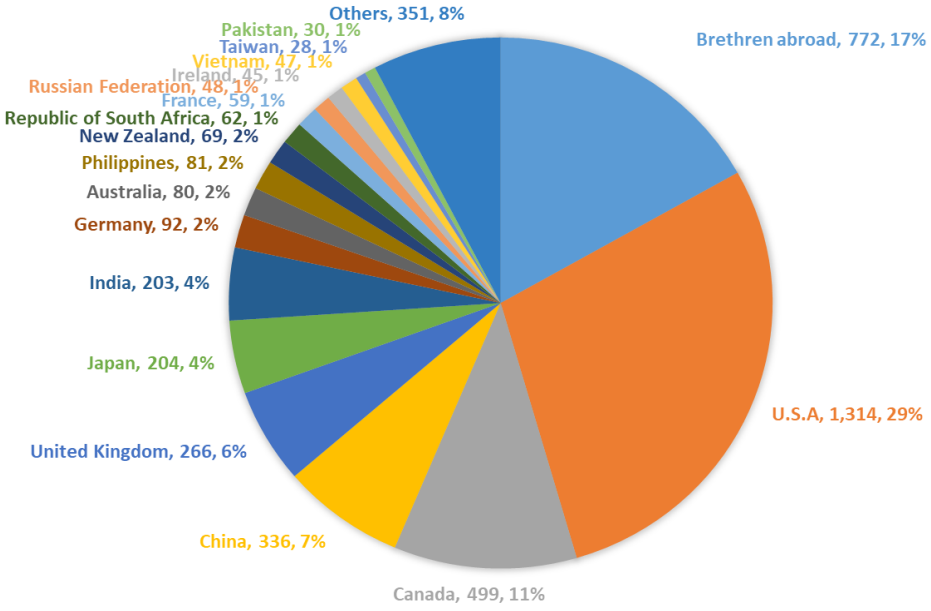

Figure 4 International faculty members in Korean universities by nationality

Note: The full-time faculty numbers for universities include the full-time faculty members in the graduate schools

Although there was an increase in the number of international academics with diverse backgrounds during the last several years, there have been limited studies about the challenges they face in universities and integration with domestic academics. It is true that the top-down policy approaches of the WCU and BK 21 Plus projects contributed to providing an opportunity to attract international academics to Korean universities with a focus on increasing the global competitiveness of research performance. Many academics who came to Korea through the WCU project have returned to their home countries or other world-class universities because they could not adjust well to the academic culture and the harsh research environment in Korean universities. Several news articles easily confirmed through the faculty members' interviews and critiques that they faced strong authoritarianism and an exclusive atmosphere, a lack of promotion and career development opportunities, and relatively low salaries (Chosun-Ilbo, 2016a, 2016b; Joongang-Ilbo, 2016). The most common problems that they pointed out are the closed academic culture, which involves rigid networks shared among alumni colleagues from the same graduate college (or department) and discipline (academic area), and a hierarchical structure determined by seniority that cannot be overcome even in an academic context. This is mainly related to the academic culture at Seoul National University; as a top national research university, 57.5% of its international faculty members perceive that the division where they are affiliated is hierarchical, whereas only 18.6% perceive it to be equal (Seoul National University, 2018). A study of a top private research

university shows similar results. There is the systematic disempowerment of international faculty members, which works the same way for young and untenured faculty members during decision-making processes (Kim, 2016). As the majority of international faculty members are untenured (they are mostly contract-based despite being full-time employees) and do not have fluent Korean proficiency, they are easily put in a situation of being intentionally or unintentionally excluded from governance within the university. Korean language ability is not actually a requirement for employment or promotion, but it is critical as "another pseudo measure of we-ness" (Shin & Gress, 2018) in networking with Korean colleagues. Therefore, it is critical to support international academics in an appropriate research environment to improve their productivity and job satisfaction and to help to integrate academic culture and governance in Korean universities (Gress & Ilan, 2009).

Universities also have difficulties in providing appropriate support for international academics because of the language problem and budget limitations. As previous policies for international faculty members, such as the WCU and BK 21 Plus projects, have focused on recruiting in the short term and performing research output, it is risky for universities to employ them in the long term or for teaching activities without additional budget allocation. If universities fail to keep the funding based on the competitive evaluation, it will be difficult for them to continue to employ international faculty members with a high salary. Moreover, according to interviews with senior faculty members who are in top managerial positions in their universities, they expect few academic activities from international staff members compared to native ones (Shin & Gress, 2018).

There are also international faculty members who are taking roles beyond research, but they were not explored during the last several decades. A study related to international faculty members teaching in Korean universities revealed that the members who had taught in Korea for longer were using fewer teacher-focused teaching styles that have traditionally been used in the Korean context (Ghazarian & Youhne, 2015). However, Ghazarian and Youhne's (2015) study shows that there are gender differences in teaching styles among international members. In this sense, further studies and policies related to diverse issues beyond recruiting international faculty members in Korea to increase research performance, including adaptation, integration, career development, diverse roles, or support systems, need to be considered. This is because they are positioned to adjust the unique academic culture and language, which are less difficult to navigate in internationalized countries that have open-minded attitudes toward academics with diverse backgrounds and use English as an official language.

CONCLUDING REMARKS

This study presented an overview of international faculty in China, Japan, and Korea by using multiple research methods of national statistics, case study, data of national surveys, and semi-structured

interviews. The main findings include the following points.

Firstly, enhancing the global competitiveness and promoting internationalization of national higher education have become the main drivers affecting the fast growth in the number of international faculty in the three case countries. This is true in the three cases at least by 2017, though the number of international faculty at Korean HEIs began to decline since then. The implementation of relevant national strategies and projects through a top-down approach has significantly facilitated the expansion of international faculty recently in the three case countries.

Secondly, not only did the number of international faculty increase massively, but also international faculty's demographic profiles and work roles became increasingly diversified. It appears that a clear division of labor between international faculty according to their nationality and expected professional roles, as well as responsibilities, has been gradually formed.

Finally, although most of the international faculty came to China, Japan, and Korea for academic and professional reasons, there is little doubt that international faculty still faced many challenges. Despite differences in the three countries, they include issues concerning their integration into domestic society, their participation in governance arrangements or decision-making processes in their affiliations, and worries about their uncertain future careers. Compared to China, in which many international faculty who seem to enjoy more favorable overall working conditions because a majority of them were hired based on specifically designed national policies or projects or special institutional programs, the international faculty in both Japan and Korea appear to face more challenges and barriers.

Major implications derived from this study include: firstly, despite no generic ways of helping international faculty in the three countries address the challenges they faced, it seems that it is important to create and implement national policy, strategy, and project to hire international faculty in collaboration with individual universities in which they are employed and local communities in which they live. Namely, due to the fact that none of the three countries is a country of immigration or a native English-speaking country, working out national-level regulations or laws that are more friendly to international faculty in relation to visa application and renewal, creating a society and workplace with a greater degree of internationalization, tolerance and friendliness to international faculty would inevitably attract more global talents. Secondly, even if there is no need for all international faculty to be integrated into local culture or communities, dramatic differences in the way of accommodating, managing and supporting international faculty members between the administrative line and academic line within one university should be diminished and more university-wide international working environments should be created and supplied. This implies that a further internationalization of university governance arrangements, including fostering internationally-minded administrative staff is needed and important in the case countries. Finally, international faculty should not be considered to be a special group or a group isolated from domestic faculty members and administrative staff, though supportive measures need to be taken for them. This is especially true for administrative staff to consider them to be an integrated part

of their organizations at a university, college, and department level.

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7. Korea's Policy Initiatives to Recruit International Academics

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Introduction

As one of the biggest streams brining about the changes of university society, the higher education internationalization is leading overall changes of university ranging from the professor recruitment market to diversity of university members, curriculum, and physical structure of campus. In accordance with the internalization trend of higher education, the university evaluation systems such as global university rankings and media university evaluations began to hugely influence the universities in Korea. This is attributable to the fact that the universities in Korea have growing interest in international students due to their facing problems including the decrease in the school-age population and the lack of freshmen. As under this environment, the importance of university evaluation is gradually emphasized which gives direct influence on the attraction of international students and public relations of university under this environment, it naturally leads to growing interest in internationalization-related index which takes an important part in the university evaluation indexes of the government and the outside. As the Korean government also encouraged the foreign professor employment of the university through the financial support, the number of foreign professors at the universities in Korea continued to increase from 2000s.

Korean government’s policy on higher education internationalizati on

It was the period of the Kim Young-sam administration when the higher education internalization emerged at the center of discussion. Followed by founding of WTO in 1995, GATS (General Agreement on Trade in Services) came into effect. As a result, the higher education was regarded as a kind of service and its importance began to get attention as the opening of the field was needed. The Kim Young-sam administration selectively opened the fields of higher and adult education and established a step-by-step strategy responding to opening of education field through the domestic use of excellent foreign educational services. As afterwards the deficit in the study abroad balance caused by expansion of study

overseas became an issue, the Kim Young-sam administration pursued the policy to attract foreign university and expand the foreign professor and international student in order to attract the international student to Korea. It was the period of the Roh Moo-hyun administration when the internationalization of university was actively carried out. The government expanded the joint operation of curriculum and invitation of excellent foreign professors. This keynote continued under Lee Myung-bak and Park Geun-hye governments that provided large-size budget support to the step-by-step implementation of Study Korea Project, the world-class university project (hereinafter referred to as WCU), and international exchange of research personnel for strengthening the global research manpower of the university. (Kim et al, 2013)

It appears that the foreign professor related policy does not take an important part in the government-led policies on internalization of higher education. In terms of student mobility, Korea is a country with deficit in the study abroad balance, in which the number of Korean students studying abroad exceeds that of the international students at the higher education institutes in Korea. Accordingly, the early policy direction of the government was focused on expanding and supporting attraction of international students. With many efforts pooled in attracting foreign students, the demand for English medium instruction at the universities in Korea increased, and the policy for supporting foreign professors was also made.

The direction of policy on foreign professor varies considerably, depending on the states. Some countries including Hong Kong, Singapore and Switzerland undertake active initiatives to maintain a certain percentage of foreign professors. Some countries restrict the retirement guarantee of full-time professor to their citizen whilst other countries pursue the policy, which is not considered closed, but gives priority to employment of their citizens. (Altbach & Yudkevich, 2017) Korea does not undertake any strong initiatives to maintain a certain portion of foreign professors among the total number of professors, but the government-level attraction policies have been constantly implemented to strategically attract excellent foreign research personnel.

It was early 2000s when the universities in Korea began to actively invite international academics. Amendments to Educational Officials Act in 1999 enabled the national and public universities to appoint full-time foreign professors, and the government began to provide financial support to employment of foreign professors, which resulted in its acceleration. Subject to the limit of appointment of foreign professors under the Educational Officials Act, the foreign professors were allowed only at some private universities until 2001. However, in 2001, the Ministry of Education & Human Resources Development began to finance the project for establishing the brain pool of excellent foreign professors and inviting the excellent professor, thus providing financial support to salary and stay expenses spent by the universities for the employment of foreign professors. As a result, the top-ranking research-oriented universities competitively announced their plans of expansion.

Lee (2017) divided the transition process of university financial support policy into five periods; 1) before 1994, 2) 1994-2003, 3) 2004-2007, 4) 2008-2013, 5) after 2014. It started with the period before 1994 when the financial support to university was trivial. As the differential support system

based on evaluation was introduced from 1994 to 2003, the national support project was created together with various kinds of evaluation systems. The typical policy on higher education internalization was Brain Korea 21. Its first stage project was undertaken from 1999 to 2005 and its second stage project from 2006 to 2012. This project aimed to improve the competitiveness through benchmarking the world-class foreign universities, and accordingly, the foreign language medium instruction and the percentage of foreign professors were reflected in the evaluation indexes, which began to drive employment of foreign professors.

From 2004 to 2007, the selective support was fully carried out. During this period were undertaken the Study Korea Project, a typical internationalization policy for attracting international students, and the English medium instruction support project. This policy aiming to swing to the profit in study abroad balance through expansion of attraction of Inbound international students brought about the internalization of campus and the increase in the percentage of English medium instruction, and it is analyzed that this tendency indirectly encouraged the employment of foreign professors.

The period between 2008 and 2013 was the time when financial support project as a mechanism was actively carried out together with overall expansion of higher education financial support. During this period, the World Class University Project, a representative policy to encourage employment of foreign professor, was carried out. This project aimed to innovate the research climate of Korean universities through employment and short-term invitation of foreign scholars. Under the project, the government provided support to labor & stay costs and overhead through universities. The main point of the project was invitation and employment of excellent foreign scholars, and the follow-up monitoring of research and education under the goal of developing the university into a world-class one by attracting excellent professors and securing competitiveness of university through it. The BK21 PLUS project which started in 2013 maintained a considerable portion of internationalization educational condition indexes, including the percentage of professional professors and foreign language medium instruction, which were undertaken under the preceding projects, BK21 and WCU.

The government's internationalization policy was mainly focused on the professors at the university but not on attraction of foreign scholars outside the university. There were only a few polices which aimed to attract the foreign scholars to research institute or public institute rather than the university. The purpose of these policies was to invite the science and engineering research personnel from overseas. The typical polices include World-Class Institutes (WCI) Project and Brain Pool Project in which the expenditure support was directly provided in order to attract the science and engineering researchers from overseas.

In the <Table 1> can be seen the policy target and expected effect of the government-led policies on international academics, mainly the WCU and the BK21 PLUS, the typical ones of the Ministry of Education-led policies on foreign professor. Amid the arguments over serious outflow of talents attributable to worsening research environment at home, the WCU came to the fore with the necessity for large-scale national project to ensure the settlement of excellent foreign researchers in Korea in order to gain a foothold for turning into a state of inflow of talents. The background of the project

which is defined by the basic plan of world-class research-oriented university (WCU) fostering project had three points; 1) the qualitative improvement of research result for creating new growth engines and the support strategy centered on professor and researcher; 2) the improvement of university competitiveness by having best professors; 3) the conversion from Brain Drain to Brain Gain.

<Table 1> Major policies for internationalization in higher education

Year	Project	Project Goal
1999	BK21	Foster world-class university and excellent research manpower
2005	English medium instruction support project	Support the opening of foreign language medium instruction of university
2008	World Class University project	Invite renowned foreign scholar, and innovate education and research climate, and enhance global competitiveness
2013	Study Korea 2020 Project	Attract 200,000 international students, and vitalize Pro-Korean networks
2013	BK21 PLUS	Foster global research-oriented university and high-level professionals
1994	Brain pool(plus)	Attract excellent foreign scholar

With the keynote that the quality of university does not go beyond the quality of professors, it was pointed out that Korea had less world-class star faculty with a number of citations than US and Japan. And the fact that full-time international professors only accounted for 3.75% (as of 2007) at the universities in Korea was considered a reason of poor grades in world university evaluation. (Ministry of Education, Science and Technology, 20th June 2008)

The WCU can be regarded as a project in which active employment strategies were carried out with the aim of the rise in world university rankings and the qualitative improvement of research by employing the prominent foreign professors with a number of citations in order to enhance the competitiveness, judging that the limitation of international prestige and competitiveness was due to shortage of international professors.

The BK21 PLUS, the follow-up integrated project of WCU and BK21, started under the vision of strengthening the research-oriented university infrastructure, improving the global competency, fostering high-level professional, and strengthening educational and research manpower of local universities. The BK21 PLUS started with three goals; 1) fostering global research-oriented university; 2) nurturing core high-level human resources in each academic field and high-level professionals in convergence fields, 3) the qualitative improvement of education and research of domestic universities.

The BK21 PLUS provides support to three specific fields such as global professional fostering, specialized professional talent fostering, and future-based creative talent fostering. The project can also provide support for the internationalization expenditures which are used to attract and employ international academics. This shows connectivity with the preceding WCU.

<Table 2> Background and expected results of representative international academic recruitment projects

WCU		BK21 PLUS
• Secure the source of future national wealth by fostering the manpower who can create creative working knowledge. • Enhance university competitiveness by having the best professors • Conversion from Brain Drain to Brain Gain	Back ground	• Necessity for nurturing creative talents of master's and doctoral level who can lead the creative economy • Necessity for improving the creative environment of university education and research and for enhancing the role of university as a hub to create creative results
• Promote research in key areas for future national development and nurture future generations of academics • Innovate the educational and research climate of universities by securing foreign scholars with high research capabilities and foster world-class research-oriented universities	Objective	• Foster global research-oriented university • nurture core high-level human resources in each academic field and high-level professionals in convergence fields • The qualitative improvement of education and research of domestic universities
• Attract/recruit foreign scholars with high research capabilities as full-time or part-time professors • Compose a joint research team and conduct joint research	Expected results	• Increase in the number of universities in top 200 QS rankings. • Support excellent research personnel of master's and doctoral level and new research personnel • Rise in impact factor ranking of SCI-level papers

In particular, in the case of global talent cultivation project group, the plan to invite and employ foreign scholars (first stage, 10%) was included in the selection evaluation items. And were also included direct or indirect indexes such as education internationalization strategy and research internationalization, and participating professor research competency, which aimed to encourage employment of foreign

professor.

WCU and BK21 PLUS, the typical programs of the government-led policies on employment of foreign professor can be summarized as a financial support project for recruitment and domestic settlement of foreign professor, underscoring the need of recruiting foreign professors for qualitative improvement of research results, with the expectation that recruitment of foreign professors can bring about the international reputation and enhancement of competitiveness of domestic universities.

Under the two programs which are the typical polices on foreign professors, the purpose of attracting foreign professors is to foster world-class, global research-oriented university, and to encourage the joint research by attracting foreign scholars and participation of domestic professors, and to bring about the rise in world university evaluation ranking and impact factor ranking of SCI-level papers.
They aimed to get the improved research results of quantitative and qualitative level, which are same as research results of other academic promotion projects rather than detailed usage plan followed by recruiting of foreign professors. This approach can be found out at "world class faculty ⇒ world class department ⇒ world class university", a basic theory of WCU project.

<Table 3> Major international academic related indexes of university financial support project

Start Year	Project	Note
2008	World-class research-oriented university (WCU)	• Invite full-time/part-time foreign scholars, depending on the kind of project
2009	Strengthen the educational competency of university	• Internationalization index • Percentage of foreign professor • Percentage of foreign graduate • Percentage of TOPIK 4th or higher grade international student
2010	undergraduate education leading university (ACE)	• Percentage of full-time foreign professors • Percentage of foreign graduates
2013	BK21 PLUS	• Current status of internationalization of educational infrastructure • Percentage of foreign language medium lecture • Percentage of international student • Percentage of foreign professor • Percentage of dissertations written in foreign language

The key point of world-class research-oriented university is the quality of professor, so they basically expect that introduction of foreign professor will result in positive ripple effect, excellent papers, and high-quality education. (Kim, Lee, & Jang, 2014) The point which needs attention at the

government-led policy on international academics is that in order to promote internationalization of university, the government used the indexes such as the percentage of international professors, expansion of dormitory for foreigners, and the percentage of foreign language medium lecture as the indexes for university financial support.

The government's policy on foreign professor used regulation and subsidy in order to achieve its goal, that is, it secured a certain percentage of professor by means of the subsidy to university and the university financial support project indexes. The <Table 3> checks if the indexes related to university financial support project and internationalization are included.

As explained above, except for WCU and BK21, the typical internationalization projects which gave impetus to recruiting of foreign professor, the competency reinforcement project and undergraduate education leading university project, with a characteristic of general financial support, not aiming for internationalization, use the indexes such as the competency for university advancement, the percentage of international academics, and the percentage of full-time international academics in selection evaluation.

Under this section, we have summarized the government-level internationalization policy (project), university financial support project index, and university evaluation index. To sum up, the policy on foreign professor was not implemented under a single policy, but it formed a proportion of internationalization policy as a sub-category of university internationalization policy and consistently encouraged recruitment and invitation of foreign professors through BK21 and WCU projects.

The objective of the foreign professor employment policy seeks for a justifiable policy objective for strengthening the global competitiveness of university, but it can be summarized that the policy seeks for instrumental value-oriented evaluation indexes including the rise in university evaluation rankings and research citation count rankings. It can be also summarized that in order to attain the objective, the policy pursues the regulation through evaluation indexes of university financial support project and the payment of subsidy through the project.

Global university rankings and universities in Korea

The motive of university for recruitment of more foreign professors can vary depending on specific situation of each university, but it basically aims for securing the international competitiveness of university and gaining reputation of university in response to opening of higher education market.
However, the reason why university seeks for internationalization can vary, depending on the environments surrounding the university, such as the country where the university is located, the economic situation of the state, the structure of educational institute, and the mission and characteristics of the university. Depending on the various kinds of motives, the university's internationalization strategy can reflect various contents and objectives.

It can be summarized that in particular, the employment of foreign professor by non-western

world university is intended for usage of their research network (Welch, 1997) or for the EMI, the attraction of international student, the operation of international program, which were competitively expanded among top-ranking universities. (Byun et al., 2013). This intention lies in the aspiration of non-western world universities for world university evaluation raking and reputation. The universities in North America dominate the top world university rankings, so academia's attention is not that great. However, the universities in the countries except for North America pay much attention to world university rankings. The top universities in non-western countries have interest in the world university rankings to get the recognition similar to that of the university in US. (Hazelkorn, 2008)

It was 1990s when the interest sharply increased in university rankings in Korea. Joongang Daily started university evaluation in 1994. With the emergence of world university rankings in early 2000s, including ARWU of Shanghai Jiao Tong University (2003) and THES/QS (2004), the interest has grown in university evaluation indexes. University ranking was first used as a tool for the accountability of university by providing university information to education consumer and the government who want to know the ranking of university. However, its impact sharply increases due to reduction in college admission resource and ever-intensifying competition in higher education market. In particular, *Joongang Daily* university evaluation's internationalization index of university evaluation which was abolished in 2005, served as a visible indicator of university internationalization, together with the increase of university EMI until its abolition.

With the belief that using English as an education language and expanding English medium instruction at the university would give positive impact to development of students' career and their entry into labor market, there is expectation that it will be helpful in attracting foreign scholar and international student. (Byun, et al., 2011) From the government's point of view, the university rankings back up the validity of budget support, and it can be considered a visible result of higher education support. Therefore, they seek the ways for the rise in global rankings.

There were many macro-level studies dealing with the emphasis on world-class research-oriented university and the impact of global world ranking system to higher education system. But there were only a few pilot studies which dealt with the impact which this keynote gives to an individual university and its members.

In Korea, too, university evaluation by press and world university rankings have been used as an easy tool by education consumers to evaluate the relative position and reputation of university. They are such important factors for the evaluation of university that the government and the Ministry of Education describe the rise of world university evaluation rankings as the target of financial support project. The large-scale research-oriented university particularly uses the world university rankings as the means of external public relations and the performance indicator of university innovation.

The internationalization among many indexes of global ranking is the source of competitive advantage of higher education institutes. Therefore, the market and outside pressure on the university internationalization strategy naturally gets intensified as the attention of the government and university grows in global ranking. The ways in which the issue of global university rankings and international

competitiveness of university give impact to higher education institute vary depending on the country and cultural area. The pilot studies are consistently undertaken to prove that the methods implemented under the cultural context of non-western and non-English countries including East Asia are quite different from the attitude of western and English-speaking nations. Among them, the Hallinger (2013) focused on the way in which the global ranking are implemented in higher education in Asia. It mentions that the Asian governments and leaders regard that their university ranking has something to do with the so-called national dignity, so they pressure the universities to participate in the unfavorable competition where the research-oriented universities from Britain and US usually have advantages and that this kind of pressure leads to policy imitation from the university. Under the same context, Kehm (2014) stated that the global ranking results in isomorphism which means the tendency to imitate the top-ranking university.

Discussion

It is not easy to find out through literature survey the exact time when foreign professors were appointed for the first time at Korean universities, but it can be said that the history of foreign professors at Korean universities started with establishment of university.

But there existed no any clear regulations on appointment of full-time foreign professor until early 2000s, so the appointments were mainly based on customary permission of the related ministries. The issue of foreign professor was under active discussion, as the Seoul Central District Court judged that the appointment of foreign president is invalid regardless of national, public, and private universities on the basis of the citizens' right to hold public office. (Jo, 1994) This judgment raised the necessity for legislative revision and the discussion over the current status of foreign professor employment at Korean universities and their legal status.

The foundation for internationalization of university was built as the "University Education Internationalization" plan of the 5.31 Education Reform was announced in 1995. (Shin, 2006) Then the employment of foreign professor was put on a new phase.

Whist the previous direction of basic level university internationalization was focused on the department education, the internationalization followed by 5.31 Education Reform became a foothold to experiment various kinds of internationalization model at the education stage of university. This became an important opportunity in which each university established the specialized internationalization strategy by vitalizing the academic and research exchange with foreign scholars and employing foreign professors. The government-led policy to actively attract foreign professors is considered to succeed in increasing the number of foreign professors in a short period of time.

In 1994, there were only 605 foreign professors at 95 universities, including visiting, guest, and exchange professors as well as full-time professors. (Jo, 1994) But the number of foreign professors continued to increase almost every year until 2013, with 1,980 in 2001 (Korean Council for University

Education, 2001), 3,325 in 2005, and 6,012 in 2010. After 2014, the number of foreign professors slightly decreased every year, and there were 6,754 foreign professors as of 2018. (Korean Educational Development Institute, 2018)

In contrast to the fact that in the early years, most of foreign professors were foreign language lecturers from Britain and America, the profession fields of foreign professors who settle in Korea are diversifying and the percentage of foreign professor out of new professors employed by the research-oriented universities is consistently maintained. (Byun et al., 2011)

Although the number of foreign professors continued to increase from 2000s as the government-led policy to increase the foreign professors was in accord with the internationalization strategy of university, some side-effects and criticism ensued.

There is consistent criticism over the closed academia atmosphere felt by foreign professors who entered the Korean universities in accordance with foreign professor expansion policy, the top-down decision-making process and exclusion of foreign professor from the process, and the simple index-oriented internationalization policy. (McNeill, 2011) Accordingly, it is necessary to study and understand the activity and adaptation of foreign professors at the context of university.

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8. Transnational Universities and International Academics in Southeast Asia: Talent Strategy and Dual Embeddedness

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Introduction

Tertiary education internationalisation is a growing global trend. The notions of tertiary education internationalisation initially diffused from the Global North to Global South. Leading universities in the West have further shaped knowledge formation worldwide (Marginson and Ordorika, 2011:79-83). The Global South has often been portrayed as the knowledge receiver rather than knowledge sender in the research terrain of tertiary education internationalisation (Marginson and Ordorika, 2011: 89-94) and policy transfer (Campell and Hall, 2017). However, recent discussions on the Global South as the knowledge-producer are emerging (e.g., Marginson and Ordorika, 2011; Liu and Wang, 2021; Liu, 2022; Van der Wende et al., 2020; Huang and Welch, 2021).

International academics as a whole are a consequence of tertiary education internationalisation. As noted by Huang and Welch (2021), existing studies pay little attention to international academics of tertiary education institutions with regard to their work roles, impediments and challenges through a comparative lens. They proposed two directions, the macroscope with regard to the Global South's rise and changing dynamics of tertiary education internationalisation, and roles of international academics at the microscope.

Further, scholars indicate that an interdisciplinary approach will be introduced to the studies of tertiary education. Liu (2019) investigates the political logics of tertiary education governance and institution in the global framework of talent management. Kirkby (2020) explores the historical origins, internationalisation strategies and Eurasian partnerships of Chinese tertiary education institutions in the

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New Silk Road framework. Marginson and Ordorika (2011) discuss the influence of power relations in the global tertiary education landscape.

Guided by an interdisciplinary approach, this working paper is situated in the literature of tertiary education internationalisation and talent management in the context of Southeast Asian political economies. It aims to contribute to the ongoing debates pertaining to tertiary education internationalisation in the Global South. It also examines how the rise of China is reshaping the global landscape of tertiary education from the perspective of Southeast Asia. We also discuss structural linkages of tertiary education development and talent strategy in Singapore, and the process of translating national strategies into implementation through local-based tertiary education institutions.

The remainder of this paper starts with a brief literature review on the internationalisation of tertiary education and the rise of China. It subsequently pinpoints the rationale of choosing Southeast Asia as the site of this research, and China-Southeast Asia education collaboration. Thirdly, through the case of Nanyang Technological University in Singapore, we discuss international faculty as an essential factor of university compacity building, their key characteristics, main work roles and impediments. We conclude with preliminary discussions and future research directions.

Literature Review

Internationalisation of tertiary education and the rise of China

While some scholars problematise 'tertiary education internationalisation' studies, from conceptualisation to implementation, they do not engage with historical trajectories and power relations (Marginson and Ordorika, 2011; de Wit 2014; Buckner and Stein, 2019). Tertiary education internationalisation emerged in the Western industrialised nations in 1980.[4] Over the past decades, the Global North has often been positioned as the core sender while the Global South is the recipient of the knowledge production system.

Scholarly views on the motivations of the global diffusion of Western tertiary education internationalisation can be categorised into four streams. Scholars with a neo-colonialist perspective argue that the hidden logic behind the internationalisation of Western higher education is inevitably associated with expanding Western hegemony (c.f., Altbach, 2002,2014). Scholars with the neo-liberalist perspective think that internationalising higher education is market-driven and entrepreneurial whilst being guided by the economic interests of states and societies (c.f., Olssen and Peters, 2005). Scholars from a cultural perspective argue that the main motivations are enhancing education capacity and cultural understanding (c.f., Knight, 2006).

Recently scholars have reflected that internationalisation of tertiary education of today 'is

[4] Review education policies, Internationalisation. *Organization for Economic Cooperation and Development, OECD*. Retrieved from: https://gpseducation.oecd.org/revieweducationpolicies/#!node=41769&filter=all. Accessed: 3 March, 2020.

driven by a dynamic combination of political, economic, socio-cultural and academic rationales and stakeholders' (de Wit, 2019). As noted earlier, predominant discourses in the Western study downplay the Global South, and the ethical and historical issues of these international interactions in this context. In Asia, Guo et al. (2021) argue that internationalisation is interpreted as 'westernization' and 'modernization' by Chinese university students with many Western elements and limited Chinese characteristics.

Tertiary education internationalisation and knowledge transfer within the Global South is an emerging research area, alongside the shifting of global economic power eastwards (Tonby et al., 2019). China has transformed into the world's second-largest economy and a potential leader in the tertiary education domain (Van der Wende and Zhu, 2016). In 2013 President of China, Xi Jinping, announced his signature policy, the Belt and Road Initiative (BRI), formed by the silk road economic belt and twenty-first-century maritime silk road. [5] Education is an important imperative of the BRI that boosts people-to-people bonds.[6] In 2016, the Chinese government institutionalised specific guidelines on cross-border higher education collaborations and issued the BRI Education Action Plan.[7] Although the BRI has received great attention since its launch, education as 'soft infrastructure' is less discussed with regard to the political purposes shaped by the Chinese government (Peters, 2019; Van der Wende et al., 2020). Since China announced the BRI Education Action Plan, building mutual recognition of higher education degrees with other countries and Chinese universities 'going global' have been the innovative methods that Chinese education governors have adopted.

China has established educational cooperation and exchanges with 188 regions and 46 international organisations, and had fulfilled mutual recognition of higher education degrees with 54 countries by September 2020.[8] On the other hand, Chinese higher education institutions have received invitations to establish campuses in foreign countries. Xiamen University was the pioneer to launch the Malaysia campus in 2016, followed by the establishment of the Soochow University Laos campus, Beijing Language and Culture University Thailand and Tokyo college, and Bangkok Business College jointly by Yunan University of Finance and Economics with Thailand's Rangsit University. [9] Recently

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[5] Full text of the report on the progress, contributions and prospects of the Belt and Road Initiative. *Xinhuanet*. 23 April, 2019. Retrieved from: http://www.xinhuanet.com/english/2019-04/22/c_137998357.htm. Accessed: 3 March, 2020.

[6] Ibid.

[7] Education Action Plan for the Belt and Road Initiative. *Xinhua Silk Road*. 16 June, 2020. Retrieved from: https://en.imsilkroad.com/p/314241.html. Accessed: 3 March, 2020.

[8] China Forges Agreements with 54 countries on mutual recognitions of higher education degrees. *China Daily*. 5 September, 2020. Retrieved from: https://www.chinadaily.com.cn/a/202009/05/WS5f5395d3a310675eafc57baa.html. Accessed: 3 March, 2020.

[9] Overseas campuses lead the charge in soft power push. *China Daily*. 26 February, 2016. Retrieved

Tsinghua University started the ground-breaking for the Southeast Asia Center (Tsinghua SEA) and Sustainable Development Solutions Network (SDSN) Creative Campus in Indonesia.[10] As of today, there are six Chinese higher education institutions located within the Southeast Asia region. The proportion illustrates Southeast Asia's reception of China's influence on higher education and soft power.

We categorise recent studies on tertiary education internationalisation and rise of China by three inter-related elements: *driving forces, practices, and implications*. There are two scholarly views on China's driving force in promoting BRI-relevant international education collaborations. The first group of scholars argues that transnational education collaborations and exchanges between Chinese institutions and foreign institutions along Central and South Asia routes of the New Silk Road (NSR) are 'driven by political considerations, not by the global reputation of Chinese HEIs' (Kirby, 2020; Huang, 2020). The second group of views contend that the global outreach of China's higher education is for commercial purposes (Welch and Postiglione, 2020), as are China's neoliberal practices of Sino-foreign collaboration for domestic education market formation (Mok, 2021). Scholars have noted the emergence of a Chinese model in higher education institutions (Marginson, 2011; Postiglione, 2015; Deng, 2016; Yang, 2017). Nevertheless, discussions on transferable viability in further nations are new (c.f., Sporn and Wende, 2020). Some argue that China may not provide a transferable model in the education sphere (Kirby 2020; Van der Wende et al., 2020; Huang, 2020), because of Western-influenced university formation (Kirby, 2020), strong political intervention and a dual leadership governance structure (Marginson and Yang, 2020; Postiglione, 2020), distinctive state-university relationship and Chinese political value (Huang, 2020).

Others argue that the Chinese model in the economic and non-economic field serves as a reference point for other states (Liu, 2022). It has been argued that China has developed a university governance model differentiating it from the Western paradigms – mixing Western concepts with national and partisan characteristics of China (Deng, 2016; Li, 2020). Some advocate a Confucian model after the East Asian tradition and philosophy (Marginson, 2011; Li, 2020), while others suggest a bi-cultural model without integration of Eastern and Western values (Yang, 2017), or a balanced model with dual missions (Postiglione, 2015).

Furthermore, transnational knowledge transfer incorporates both explicit and tacit knowledge transfer (Liu and Wang, 2021; Nonaka, 1994). *Explicit knowledge* refers to concrete intellectual products while *tacit knowledge* means intangible understandings and identities (Stone et al., 2019). Scopes of

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from: http://www.chinadaily.com.cn/china/2016-02/26/content_23651205.htm. Accessed: 3 March, 2020.

[10] THK Forum 2018 Welcome & Dinner Programme: Tsinghua Southeast Asia Centre and SDSN Sea Creative Campus Groundbreaking. Derived from: https://kurakurabali.com/portfolios/groundbreaking-of-tsinghua-sea-centre-sdsn-creative-campus/. Accessed: 3 March, 2020.

explicit knowledge can include the policies, administrative arrangements, and even institutions (Dolowitz and Marsh, 1996). Representative examples that illustrate transnational diffusion of *explicit knowledge* are African and Southeast Asian countries' learning from Chinese special economic zones and industrial parks (Liu and Wang, 2021; Tang et al., 2018; Wethal, 2017). On the other hand, transnational collaboration in higher education is a conduit of *tacit knowledge* transfer. *Tacit knowledge* incorporates Chinese epistemologies, norms and values. From the Confucius Institutes to universities' overseas campuses, Chinese institutions in the global arena are becoming an increasingly important force in the internationalisation of higher education and knowledge diffusion.

China and Southeast Asia education collaboration

In their recently published book entitled *China & Europe on the New Silk Road: connecting universities across Eurasia*, Van der Wende et al. (2020) discuss China-Europe tertiary education collaborations in the large framework of China's NSR. Their project sheds light on engaging tertiary education collaborations with an emerging power in the Southern sphere of the world. Insights of Southeast Asia are also significant in examining the complexities and intricacies of the response of the Maritime Silk Road-relevant region to the rise of China (Liu, 2021a; Liu and Lim, 2019). This paper chooses Southeast Asia as the standpoint for the following reasons.

Since China announced the Belt and Road Initiative (BRI), the BRI has attracted global attention. Southeast Asia is considered an important region of China's Maritime Silk Road and neighbouring region where the BRI was given priority (Ministry of Commerce of the People's Republic of China, 2016). Southeast Asian states are also strategically important for the multilateral mechanisms as ten member states of the Association of Southeast Asian Nations (ASEAN) have formed ASEAN Plus Three, East Asia Summit (EAS), ASEAN Regional Forum (ARF) and Regional Comprehensive Economic Partnership (RCEP) with other dialogue partners (Gong, 2019; Shambaugh, 2018). ASEAN announced a joint statement with China on synergising the Master Plan of ASEAN Connectivity (MPAC) 2025 and the BRI, marking the joint commitment to improving regional connectivity and economic sustainability (Association of Southeast Asian Nations, 2019).

Concurrently, Southeast Asian countries, such as Singapore and Malaysia, are receptive to cooperation with China's higher education. In 2014, with political and financial support from China and Malaysia, Xiamen University launched its Malaysia campus in Sepang. With the aim to attract and nurture Southeast Asian students, the University built a globally diverse academic team one-third of which are professors from Xiamen University, the remainders having been recruited locally and globally.

In 2020, Nanyang Technological University (NTU), a Singaporean research-intensive

university deepened its academic cooperation and talent management with China.[11] At the highest-level bilateral meeting between China and the Singapore government, i.e., the 16th Joint Council for Bilateral Cooperation (JCBC), the S$61 million funding of the Sino-Singapore International Joint Research Institute (SSIJRI) in Guangzhou was initiated, and an NTU China (West) Entrepreneurship and Innovation Base will be set up in Chongqing. The former is aligned with the NTU Smart Campus initiative of high-tech solutions, and the latter is designed to develop new entrepreneurs. Guangzhou and Chongqing play important roles in China-Singapore government collaborations. With joint efforts of the Chinese and Singaporean governments, Sino-Singapore Guangzhou Knowledge City was established in 2010 and Chongqing Connectivity Initiative was established in 2015. By choosing Guangzhou and Chongqing as the transnational education cooperation bases, R&D projects can supplement China-Singapore economic cooperation through injecting knowledge and talents.

International Academics in Singapore

Singapore and Malaysia's efforts in liberalising domestic education markets can be traced back to the aftermath of the Asian financial crisis 1997-1998 when they initiated global education hubs. As a small city-state with limited natural resources, Singapore relies heavily on international trade and investment. Building the state's competitiveness in the global economy through the pillars of attracting global talents and developing tertiary education is crucial to them. As argued by Liu (2019), Singaporean tertiary education is structurally linked with talent management. Local universities serve as a conduit for translating national policy of talent strategy into implementation and an institutionalised platform bridging international talents.

Nanyang Technological university (NTU) and international academics

Nanyang Technological University (NTU) is a representative case that reflects Singapore's structural linkage of tertiary education, economic development and talent management. NTU has achieved rapid rising of its world ranking. It ascended from 74th to 13th in the QS World University Rankings between 2010 and 2021, and from 127th to 47th in the Times Higher Education World University Rankings between 2011 and 2021.[12] NTU's rise as a global university shows how the national strategy of talent management

[11] NTU Singapore deepens cooperation with China through two new agreements. *Nanyang Technological University*. 8 December, 2020. Retrieved from: https://www.ntu.edu.sg/news/detail/ntu-singapore-deepens-cooperation-with-china-through-two-new-agreements. Accessed: 3 March, 2020.

[12] The Times Higher education world university rankings has provided the index since 2011. Data are derived from: https://www.timeshighereducation.com/world-university-rankings/2011/world-ranking/detailed#!/page/0/length/25/lo

has been translated into implementation through tertiary institutions, and synergising of talent management strategies and external assessments at both macro and meso levels (Liu, 2019).

NTU has made long-term efforts to attract and bridge international scholars. The total number of faculty members and researchers of NTU has steadily increased from 3,288 in 2010 to 5,300 in 2018, and it has experienced a slight fluctuation from 2018 to 2021. [See Table 1] The global uncertainties include the pandemic crisis and geopolitics which may account for the fluctuation during the past three years. The cohort of NTU faculty and researchers is diverse in terms of their countries of origin. They have come from 66 to 88 different countries during the past eleven years. [Table 1]

Table 1. Total number and countries of origin of Nanyang Technological University faculty and researchers

Year	*2021*	*2020*	*2019*	*2018*	*2017*	*2016*	*2015*	*2014*	*2013*	*2012*	*2011*	*2010*
Total no. of faculty and researchers	4700	5000	5100	5300	5253	4955	4550	4300	4000	3850	3600	3288
Total countries of origin	74	79	81	81	81	85	88	80	75	n.d.	66	72

Source: Data is derived from NTU official documents and compiled by authors.

The work roles of faculty members in NTU are classified by area of research, teaching, and service, according to the appraisal and promotion system. The research terrain covers publications, citations per review period, and research grants. Teaching covers undergraduate and graduate education in the form of tutorials, lectures, and seminars. Service refers to managerial and editorial contributions to the university and the academic community. According to the NTU faculty appraisal and promotion system, tenure and promotion applicants need to go through stringent assessments in relation to research, teaching, and service in the ratio of 5:5:2. The tenure and promotion exercise is conducted twice a year. Criteria for assessing teaching incorporate advising, mentoring, curriculum development, and innovation, as well as students' feedback in this category. The assessment of research centres around a faculty's impacts on its research terrain, and the assessment of services includes the membership of editorial boards of journals, etc. (Lim and Boey, 2014; Liu, 2019).

Like other well-cultivated immigrants in Southeast Asia, international scholars embed themselves in social and economic activities in the home and host country (Ren and Liu, 2015, 2022; Zhou and Liu 2016; Zhan and Zhou, 2020). We regard *dual embeddedness* as one of the key

cations/SGP/sort_by/rank/sort_order/asc/cols/undefined. Accessed: 3 March, 2020.

characteristics of international scholars based in Southeast Asia, as they often engage in academic activities in two or more countries. Their transnational academic activities incorporate three main types: collaborating on research projects and co-authoring publications with scholars in their home country and cross-citation publications of scholars in their home country. It should be highlighted that the implications of *dual embeddedness* for international faculties on home and host countries need to be uncovered with more empirical data.

Challenges of international academics

Challenges of international academics in the host country have often been neglected due to their social-economic status (Zhan and Zhou, 2020). International academics in host societies like Singapore are vulnerable to employment and settlement insecurity (see also Zhan and Zhou, 2020). Such vulnerability is due to a systemic combination of macro-level factors and institutional factors, which play a key role in shaping the 'characteristics and trajectories' of immigrant transnationalism (Zhou and Liu, 2016). The changing political and societal environments in Singapore are shaping the dual uncertainty of foreign scholars. Competition among highly skilled immigrants is causing a backlash from the Singaporean working class (Yeoh and Lam, 2016). In the 2011 General Election, Singapore's ruling party, the People Action Party (PAP), won 60.1 per cent of the popular vote, the lowest since independence (Liu, 2021b). Immigration was mobilised by the opposition parties as a politicised topic to counter the ruling party during the 2011 and subsequent General Elections.

Preliminary Conclusions

This paper starts with the role of China in the tertiary education landscape and knowledge diffusion of Southeast Asia, and zooms into the microscope on the international scholars under this changing political and economic environment. As China's influence is growing, it is beginning to seek a more prominent role in the neighbouring countries. Transnational education collaboration is a less politicised approach for combining the interests of China and other states. Those collaborative efforts in education and talent management are essential for coping with the common challenges confronting the world.

This paper attempts to present insights for China-Southeast Asia education collaboration, and enriches the *characteristics, work roles and difficulties* of international scholars in Southeast Asia through the case of Nanyang Technological University. This represents ongoing research, and more empirical data will be needed before we can provide more in-depth answers to the questions raised at the beginning of this paper.

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9. Non-US citizen PhDs in the United States: Career outcomes and experiences beyond academia

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In the United States, international scholars, researchers and scientists from everywhere can be found, especially in recent years. Although international scholars and academics are a product of the increasing global mobility of individuals for education, training, and jobs, it is worth noting that the prevalence of international academics and scholars in the United States is largely associated with scholars' global mobility in pursuit of their advanced education at U.S. higher education institutions. This situation differs from that in many other nations in which international scholars and academics tend to be those who crossed national borders for professional experience and career advancement after completing their education (Kim et al., 2021). Therefore, while the U.S. is a net importer of international academics and scholars (Bound, Turner, & Walsh, 2009), it is also worth noting that most international scholars in the United States were originally drawn to the country largely due to its globally visible and reputable higher education institutions.

Since the 1970s, the number of international students, particularly at the doctoral level, in U.S. higher education institutions has increased significantly and the influx of international students to U.S. higher education is often cited as "one of the most significant transformations in U.S. graduate education", further expanding the labor market for highly trained workers (Bound et al., 2009, p.1; Kim & Jiang, 2021). At the doctoral level, for example, of the 31,019 PhDs who were awarded doctoral degrees from U.S. higher education institutions in 1980, 12% (3,696) were non-U.S. resident, temporary visa holders. Ten years later in 1990, the representation of non-U.S citizen, temporary resident PhDs reached 23% (8,140 out of 36,065). Although the share of temporary residents tended to remain around 20% during the 1990s and 2000s, it has recently increased again, reaching 33% of all PhDs in 2020. Focusing on Science, Technology, Engineering and Math (STEM) PhDs, the share of foreign PhDs present changes even more dramatically: In 2020, 42% of STEM PhDs from U.S doctoral institutions were non-U.S. citizen, temporary residents (14,171 out of 33,675), rising from 33% in 2000 (6,575 out of 19,926) (National Science Foundation, 2022). The representation of international students among PhD recipients is yet more striking when examined by individual academic discipline; among doctorate recipients in 2003, foreign students accounted for 50% of PhDs in the physical sciences, 67% in engineering and 68% in economics (Bound et al., 2009; Kim & Jiang, 2021).

While doctoral training has traditionally been considered a preparation for academic positions (Golde & Dore, 2001; Nerad, 2004), the significant increases in the number of PhDs produced by U.S. doctoral institutions since the 1960s (Schillebeeckx et al., 2013; NSF, 2020a), has certainly changed career outcomes among PhDs. For instance, in the mid-1990s, about a quarter of science and engineering (S&E) PhDs secured tenured or tenure-track faculty positions within five years of achieving their doctoral degrees. The share of all PhDs in faculty positions decreased to 20% in the 2010s (National Science Board, 2018). As the share of academic employment of the doctorate holders has been shrinking, the role of non-academic sectors, including jobs in for-profit business/industry, government, or other non-profit organizations as employment opportunities have expanded (Morrison et al., 2011; National Science Foundation [NSF], 2020b; Nerad & Cerny, 2002; Nerad et al., 2007; Stephan, 2012; Stephan et al., 2004). In the mid 1990s, more than half of the PhDs in biochemistry, computer science, and electrical engineering were working in the business, government, or non-profit sectors after 10 to 13 years from their doctorate receipt (Nerad & Cerny, 1999, 2002). Ten years later in the 2000s, science and engineering PhDs in the industry sector outnumbered those in the entire academic sector (Stephan, 2012; Stephan et al., 2004).

As non-U.S. citizen, temporary visa holders have made up a greater share of PhDs produced in the U.S. and many of them stay in the U.S. after graduation, it is crucial to recognize their intellectual contributions to the U.S. academe and industry, as postdocs, as faculty members, or as researchers (Levin & Stephan, 1999; Stephan, 2010; Stephan & Levin, 2001). Black and Stephan (2010) demonstrated the role of foreign researchers as knowledge producers by analyzing authorship patterns in the journal *Science*, finding that more than half of papers included a foreign student or postdoc as one of the co-authors. Along the same line, research also finds that more than half of the first authors who were graduate students or postdocs were foreign-born and highly cited articles and patents are disproportionately produced by foreign-born researchers (Levin & Stephan, 1999; Stephan & Levin, 2001). While it is obvious that non-U.S. citizen PhDs make significant contributions to research outcomes and to the U.S. economy, little research has examined the career outcomes and professional experiences that these non-U.S. citizen PhDs experience, in both academe and non-academic employment sectors. Therefore, in this study, we examine career outcomes and career experiences among doctoral graduates with particular attention to differences by citizenship status. Of the non-U.S. citizens, we further examine career outcomes and professional experiences by country of origin. Research questions are as follows:

(1) Are there any relationships between career trajectories at the time of doctorate receipt and actual career outcomes since graduation? Are there different patterns in career outcomes by citizenship status and country of origin?

(2) What are the factors that are associated with career outcome and experience measures (i.e., holding a supervisory position, career satisfaction with intrinsic and extrinsic factors)? Are there different patterns in these factors by citizenship status and country of origin?

Understanding Career Outcomes and Career experiences among non-U.S. citizens

The increased importance of non-academic sectors as employers of PhDs is more pronounced among non-U.S. citizen, temporary visa holders than among U.S. citizens and permanent residents (NSF, 2020b). During the 2010s, the industry/business sector employed over 60% of non-U.S. citizen PhDs with temporary visas. On the other hand, less than 30% of U.S. citizens or permanent residents worked in the same employment sector. In another study focusing on PhDs in engineering, Tao (2016) found that temporary visa holders are less likely to be in government than are U.S. citizens. In general, the significant differences in employment sector by citizenship status are considered to be largely due to U.S. immigration laws and visa polices.

For non-U.S. citizen PhDs who want to stay and work in the U.S. after their education, establishing legal status in the U.S. is the first and often foremost consideration for their early career choices. The majority of PhDs without U.S. citizenship or permanent residency start their first job with an H-1B non-immigrant employment visa (Roach & Skrentny, 2021). The total number of H-1B visas available for each year is capped—the yearly caps as of today are 65,000. However, the quota restriction of H-1B does not apply to employment in higher education institutions or non-profit organizations. Non-U.S. citizens with visa constraints may therefore have to pursue employment with H-1B cap-exempt employers to maintain the legal status required to work in the United States.

Although doctoral graduates across all fields of study have traditionally shown a preference for tenure-line faculty careers (Cyranoski et al., 2011), with the limited number of faculty positions available, PhDs who pursue academic positions often choose postdoctoral training that provides “extended training opportunities” for their long-term career aspirations, not because this is their preferred option but because completing a postdoc is now a “near-requisite” step for research careers, particularly in STEM fields (Cantwell & Lee, 2010, p. 490). In prior studies, temporary visa holders are more likely than U.S. citizens to take a postdoctoral position and to spend longer time in postdoctoral positions than U.S citizens (Stephan and Ma, 2005; Kahn & Ginther, 2017; Main et al., 2021). Supporting this, Stephan and Levin (2007) argue that the increased share of non-U.S. citizens in the academic sector is largely driven by their disproportionate placement in temporary positions including postdocs rather than in permanent tenure-track faculty positions. One primary reason why non-U.S. citizens tend to choose a postdoctoral position in higher education institutions more frequently than U.S. citizens (and often remain in these positions for lengthier periods), is related to visa policy. For non-citizen temporary visa holders,

postdoctoral positions provide an employment opportunity with less restriction in that both H-1B employment visas and J-1 visas for foreign scholars are available for such positions (Lan, 2012). In fact, foreign-born PhDs, particularly Asian foreign-born PhDs are more likely than White domestic PhDs to take a postdoc position because they had no other options available given the visa and employment restrictions (Huang et al., 2016).

Even in industry sectors where the H-1B visa quota is applied, the process of securing H-visas may affect the specific employer type that international PhDs choose. For instance, PhDs with a temporary work visa were more likely than U.S. native PhDs to work in large technology companies (Roach & Skrentny, 2021). Foreign PhDs were also less likely than U.S. citizen PhDs to be involved in entrepreneurial activities such as founding a company and joining start-ups (Roach et al., 2019; Roach & Skrentny, 2019). Given that the H-1B visa is an employer sponsored visa (meaning that non-U.S. citizen employees need to secure employers who are willing to support their employees' H-1B visa), Roach and Skrentny (2019) argued that the differences in visa sponsorship between established large firms and small start-ups are attributable to differences in size or age of the employers. In short, the significant differences in employment outcomes by citizenship status can be considered to be due largely to the immigration laws and visa polices in the United States.

Research Methods

***Data and Statistical Analysis*.**

While we recognize there might be a sizable number of international scholars and academics in U.S. higher education and workforce who received their doctoral degrees abroad and then moved to the United States, this study exclusively focuses on those who received their doctoral degree from U.S. doctoral institutions and who remain and work in the U.S. workforce. This consideration is largely due to the availability of existing data that provide information about the career outcomes and professional experiences among non-U.S. citizen PhDs. In this study, we used the 2013 Survey of Doctorates Recipients (SDR) data, sponsored by the National Science Foundation (NSF). The SDR data provide information about PhDs' career outcomes, career mobility, and career experiences among those who received their doctoral degrees from U.S. doctoral institutions and who were active in the workforce at the time of survey. In this study, post-PhD years range from 1 year to more than several years from their doctoral graduation. Therefore, we identified PhD holders based on their PhD year (the year in which the PhDs received their doctoral degrees) and categorized them into three groups based on three-time windows, "0-5 years," "6-10 years," and "11 and more years" after PhD completion. These categories allow us to examine both short-term and long-term career outcomes among PhDs.

As one career outcome measure, we used a binary variable that indicates whether doctorate

graduates chose a postdoc (or further training) or regular employment as their first postgraduation employment. The second outcome measure focuses on those with definite commitments to employment and breaks down their employers into three sector categories: (1) *academia* (colleges, universities, medical schools, or university-affiliated research institutes), (2) *governments* (federal/state/local governments), and (3) *industry* (for-profit industry, not for profit organizations, or self-employment). The PhDs whose planned employer does not fall into one of the three sector categories (e.g., K-12 schools) were not included in this analysis.

For career experiences, we examined three outcome measures, (1) whether a PhD holds a supervisory position or not; (2) the extent to which a PhD is satisfied with an intrinsic employment factor; and (3) the extent to which a PhD is satisfied with an extrinsic employment factor. Satisfaction with an intrinsic factor is a composite measure of five satisfaction measures including satisfaction with opportunities for career advancement, intellectual challenge, level of responsibility, degree of independence and contribution to society (alpha score=.82). Satisfaction with an extrinsic factor is a composite measure of three satisfaction items including satisfaction with salary, benefits, and job security (alpha score=.67).

Findings

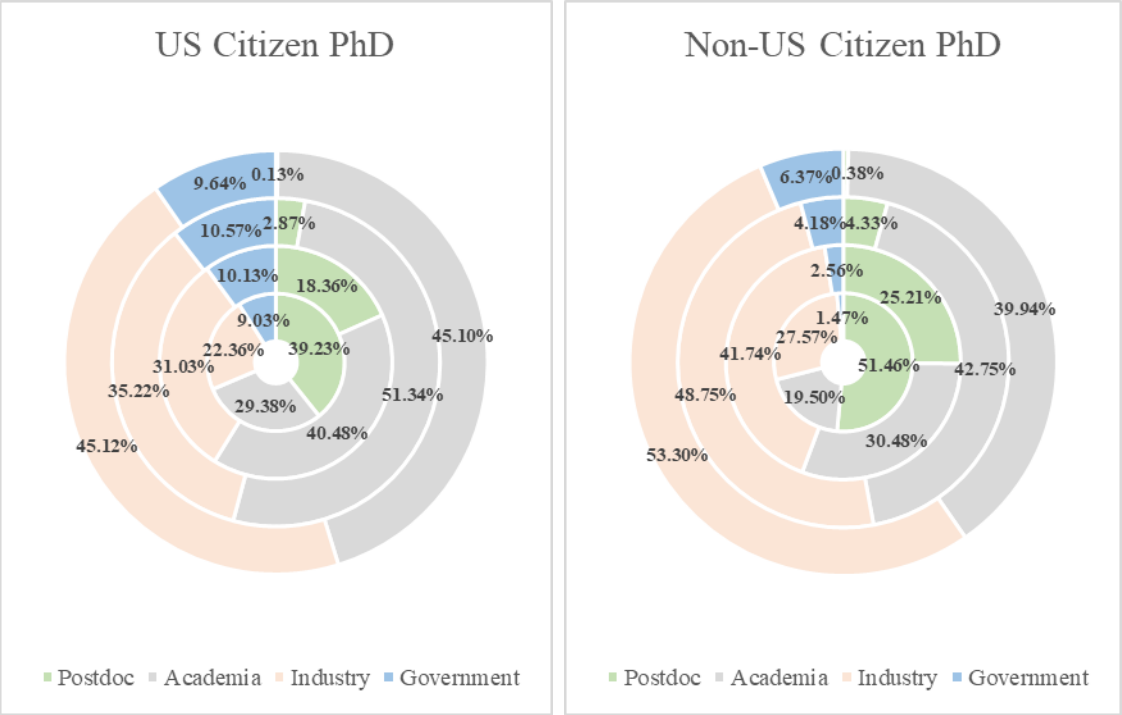
Career Outcomes

Figure 1 presents career outcomes by the different time windows since doctorate receipt. The donut shape chart was selected to visualize career outcome shifts in the different time windows. The innermost circle represents career outcomes at the time of graduation. Of U.S. citizen PhDs, 39% went into postdoctoral training, as compared to 52% of non-U.S. citizens who did the same. On the other hand, 30% of US citizens went into academia as compared to 20% of non-US citizens who did so. It is interesting to see that 28% of non-U.S. citizens entered industry, 8% higher than those who went to academe. The second circle from the center (the inner middle circle) is for the PhDs between 0 to 5 years since their doctorate receipt. The percentage of PhDs in postdoctoral training in this group was significantly lower compared to the previous group, regardless of citizenship status, shrinking from almost 40% to 18% among US citizens and from 52% to 25% among non-U.S. citizens. In contrast, the percentage of PhDs in academia increased significantly from the time of graduation to “0-5 years post-graduation”. This finding suggests that many of the PhDs in postdoctoral training at the time of graduation had made a successful transition into academia after a few years of postdoctoral training, both for U.S. and non-US citizens.

Among those who were in the labor force at more than 11 years from receipt of their doctoral degrees, comparable shares among U.S. citizens (45%) and among non-US citizens (40%) were in academia. Interestingly, of those who had been in the workforce more than 11 years, 53% of non-US

citizens worked in industry, a higher representation than that of U.S citizens (45%). This finding clearly suggests that non-U.S. citizen PhDs make significant contributions to the U.S. economy, beyond U.S. higher education and academic research.

Figure 1. Career outcomes in the four-time windows by U.S. citizenship status.



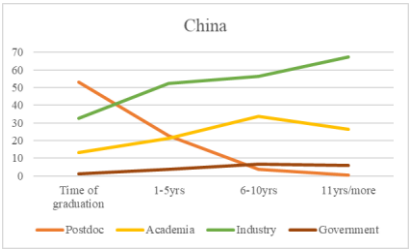
Note: This is an aggregate employment data in each time window from years following graduation. For example, a PhD who graduated in 2006 would be represented in the 6~10-year block only because the data were collected in 2013. If the PhD graduated in 1999, the PhD would be represented in the 11 years block only. To reiterate, these are aggregate data of all PhDs who answered the survey in 2013 with different PhD years since their doctoral degrees and movement of individual PhDs over time.

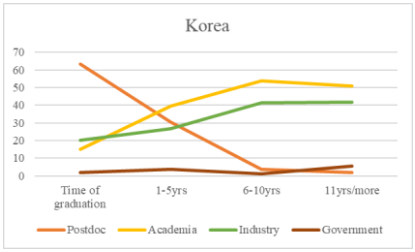
To understand whether there are different patterns in career outcomes in the different time-windows by country of origin, we further present career outcomes by the top three sending countries (See Figure 2). China, Korea, and India are the three countries that report the largest number of PhDs among non-US citizens and thus are selected for this analysis. Directly following PhD receipt, Korean PhDs were most likely to choose postdoctoral training, followed by Chinese and Indian PhDs. On the other hand, Indian PhDs were most likely to enter an industry, followed by Chinese PhDs. Korean PhDs were least likely to enter an industry than their counterpart PhDs from India or China.

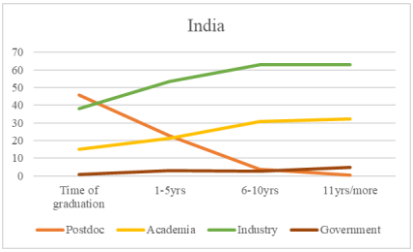
Of the PhDs within 6-10 years since receiving their doctoral degree, less than 5% were still in postdoctoral training. Instead, a significantly large percentage of PhDs, especially from Korea (more than

50%) were in academia, followed by PhDs from China (33%) and India (30%). Of the PhDs who had been in the labor force more than 11 years, Korean PhDs were most likely to be in academia, followed by industry, and then, government. For Indian PhDs, industry was the largest employment sector (more than 60%), followed bye academia. Chinese PhDs presented a pattern similar to that of Indian PhDs: Nearly 70% were employed in industry, less than 30% in academia, and 8% in government. Figure 2 suggests that there are significantly different career outcome patterns across different time windows by country of origin.

Figure 2. Career outcomes in the four-time windows: Top three sending countries







Descriptive Statistics: holding a supervisory position, satisfaction with employment

To understand whether citizenship status matters in professional experiences, we first examined descriptive statistics for the three professional experience measures: holding a supervisory position and career satisfaction with intrinsic or extrinsic factors. According to Table 1, while U.S. citizens were more likely to hold a supervisory position than non-U.S. citizens, the differences were not significant. Country of origin also mattered in likelihood of holding a supervisory position: More than half of PhDs from Canada (58%), Germany (62%), India (52%), and Russia (50%) reported holding a supervisory position. On the other hand, less than 40% of PhDs from China (39%), Japan (38%) and Korea (32%) held a supervisory position. It is interesting to note that the three countries who reported the lowest share of holders of supervisory positions are all East Asian, non-English speaking countries. In contrast, the top three countries reporting the highest share of PhDs holding a supervisory position are English speaking or

European countries.

Table 1. Professional experiences: By citizenship status and country of origin

	% Supervisory position	Intrinsic satisfaction*	Extrinsic satisfaction*
US Citizen	49.88%	.05	.02
Non-US Citizen	46.10%	-.22	-.09
Canada	57.83%	-.01	-.01
China	39.52%	-.40	-.17
Germany	61.67%	.09	-.12
India	52.41%	-.16	.02
Iran	48.11%	-.13	-.11
Japan	37.70%	-.36	-.21
Korea, South	32.02%	-.49	-.36
Russia	50.00%	-.23	.03
Taiwan	41.60%	-.41	-.20
Turkey	45.74%	-.21	-.04

*factor score

In terms of satisfaction measures, U.S. citizen PhDs reported higher satisfaction levels than non-U.S. citizens with both extrinsic and intrinsic factors. PhDs from Canada and Germany had relatively higher satisfaction with intrinsic factors than other non-U.S. citizen PhDs. It is particularly worth noting that non-citizen PhDs from China, Japan, Korea and Taiwan reported significantly lower satisfaction levels with intrinsic factors than any other non-U.S. citizen PhDs. For the satisfaction with extrinsic factors, again, very similar findings were found: PhDs from Canada, Germany, Russia, and Turkey reported higher satisfaction as compared to those from China, Japan, Korea, and Taiwan.

Regression Findings: Does citizenship matter?

Given that the significantly different patterns in professional experiences by citizenship status and country of origin might be not due to citizenship status or country of origin themselves, but may instead be largely due to other factors related to career outcomes, we further conducted a series of regression analyses to uncover whether citizenship status and country of origin play a unique role in PhDs' career experiences.

Table 2 presents regression findings that examined whether citizenship status plays a unique role in professional experiences. In contrast to the descriptive statistics, where we found citizenship is seemingly an important factor in professional experiences, in regression analysis when all other factors

Table 2. Logistic Regression Models (Total)

Variables	**Odds ratio Coefficient**		
	Supervising	Intrinsic Satisfaction	Extrinsic satisfaction
Non-U.S. citizen (vs. U.S. citizen)	0.93	-0.08 ***	-0.11 ***
Female (vs. Male)	0.73 ***	0.03 *	-0.07 ***
Race/ethnicity (ref. = White)			
Asian/Pacific Islander	0.81 ***	-0.17 ***	-0.07 ***
African American	0.95	-0.09 ***	-0.02
Hispanic	0.99	0.01	0.01
Multiple or others	0.93	-0.04	-0.04
Age	0.97 ***	-0.01 ***	-0.01 ***
Married (vs. Not married)	1.14 ***	0.08 ***	0.04 **
First-generation (vs. Continuing-gen.)	0.99	-0.05 ***	-0.01
Institutional control / Carnegie Classification (ref. = Public / Research very high)			
Public / Research high	0.96	-0.02	0.00
Private / Research very high	1.08 *	0.03	0.03 *
Private / Research high	0.92	-0.05	0.02
Others	0.92	-0.01	-0.03
PhD field of study (ref. = Biological sciences)			
Agriculture	1.16	0.01	0.14 ***
Health	1.16 *	0.06	0.24 ***
Engineering	0.80 ***	-0.10 ***	0.17 ***
Computer sciences	0.62 ***	-0.05	0.22 ***
Mathematics	0.37 ***	-0.08 *	0.13 ***
Physical sciences	0.71 ***	-0.12 ***	0.05 **
Psychology	0.65 ***	0.15 ***	-0.05 **
Social sciences	0.74 ***	-0.02	0.12 ***
Humanities	0.47 ***	-0.12	-0.13
Education	0.95	0.02	0.11
Business/Communications	0.56	-0.20	0.29
Chi-square	1009.03***	14.54***	14.76***
Pseudo R-squared	3.35%	3.99%	4.05%

* = p < .05, ** = p < .01, *** = p < .001

Table 3. Logistic Regression Models (Non-U.S. citizens from Top 10 Sending Countries):

Variables	**Odds ratio Coefficient**		
	Supervising	Intrinsic Satisfaction	Extrinsic satisfaction
Female (vs. Male)	0.80 *	0.01	-0.07 *
Race/ethnicity (ref. = White)			
Asian/Pacific Islander	2.24 *	-0.08	-0.12
African American		-0.94	-1.01 *
Hispanic	0.51	0.05	0.05
Multiple or others	2.30	0.02	-0.14
Age	0.94 ***	-0.01 *	-0.02 ***
Married (vs. Not married)	1.18	0.02	0.03
First-generation (vs. Continuing-gen.)	1.02	-0.01	0.02
Institutional control / Carnegie Classification (ref. = Public / Research very high)			
Public / Research high	1.05	-0.02	-0.08 *
Private / Research very high	1.30 **	0.06	0.00
Private / Research high	0.69	-0.01	0.05
Others	1.00	-0.02	-0.07
PhD field of study (ref. = Biological sciences)			
Agriculture	0.94	-0.22 *	0.08
Health	1.63	0.08	0.32 ***
Engineering	0.77 *	-0.10	0.27 ***
Computer sciences	0.54 **	-0.06	0.26 ***
Mathematics	0.39 ***	-0.15	0.22 **
Physical sciences	0.76 *	-0.06	0.16 ***
Psychology	1.08	-0.05	0.10
Social sciences	0.55 **	0.05	0.30 ***
Humanities	0.54	-0.53	0.18
Education	1.65	-0.05	0.57
Business/Communications	0.27	-0.38	-0.50
Country of origin (ref. = China)			
Canada	4.25 ***	0.31 *	0.04
Germany	5.50 ***	0.48 **	-0.04
India	1.61 ***	0.19 ***	0.11 **
Iran	3.28 **	0.03	-0.20
Japan	1.06	0.02	0.00

Korea, South	0.87	-0.08	-0.15 **
Russia	2.83 *	0.04	0.05
Taiwan	0.94	-0.05	-0.14 **
Turkey	3.26 **	0.04	-0.09
Chi-square	343.39***	2.27***	4.06***
Pseudo R-squared	8.42%	5.19%	9.15%

* = p < .05, ** = p < .01, *** = p < .001

are assumed to be equal, there was no significant difference in the likelihood of taking a supervisory position between U.S. versus non-U.S. citizen PhDs. However, even if all things are considered equal, non-U.S. citizens were significantly less satisfied, with both intrinsic and extrinsic aspects of their job than were U.S. citizens.

Focusing on non-US citizens: Does country of origin matter?

Focusing on non-U.S. citizens, we further examined whether country of origin was uniquely associated with professional experiences (Table 3). Compared to non-U.S citizen PhDs from China, PhDs from Canada, Germany, India, Iran, Turkey, and Russia were more likely to hold a supervisory position. Interestingly, PhDs from Japan, South Korea, and Taiwan were not different from their Chinese counterparts in terms of likelihood of holding a supervisory position. In other words, Chinese PhDs tended to be grouped together with other east Asian PhDs from Korea, Japan, or Taiwan in terms of their likelihood of holding a supervisory position.

Table 3 also presents whether country of origin matters in non-US citizen PhDs' career satisfaction with an intrinsic factor: PhDs from Canada, Germany, and India are more satisfied with intrinsic employment factors than Chinese PhDs. Again, no significant differences are found between PhDs from China, Korea, Japan, and Taiwan, all of whom tend to present similar patterns across all employment measures.

For satisfaction with extrinsic career factors, PhDs from India were more likely to be satisfied than Chinese PhDs. On the other hand, PhDs from South Korea and Taiwan were less likely to be satisfied with extrinsic factors than their Chinese counterparts.

Discussion

The primary purpose of the study is to understand whether the career outcomes and career experiences differ by PhDs' citizenship status and whether country of origin matters in career outcomes and

experiences among non-U.S. citizens. While the increasing presence of non-U.S. citizen PhDs has become a significant feature of the American workforce, little research has examined what this highly educated group of American manpower experience in their career while facing cultural, educational, or linguistic challenges in a country where they have newly settled. This study, by focusing on PhDs who are active in the U.S. labor market, provides a snapshot of current career outcomes among non-U.S. citizens, covering both academic and non-academic career outcomes. Academic positions are traditionally preferred career destinations for both U.S. and non-U.S. citizenship PhDs.

As the number of PhDs produced has significantly increased, especially for non-U.S. citizens, the career outcomes among PhDs have also expanded. While non-US citizens are more likely to engage in postdoctoral training than their counterpart U.S. citizens directly following doctorate receipt, both groups successfully made a transition to academic positions or to other employment sectors as time passes. It is worth noting, however, that Korean PhDs are significantly more likely to take an academic position than PhDs from China or India. At the same time, Koreans are much less likely to go into industry than Chinese or Indian PhDs. From this study, it is not clear why there are significantly different patterns in employment outcomes in different time spans post-PhD by county of origin. These patterns may be associated with faculty position availability in the home country (i.e., those who pursue academic careers facing limited positions in their home country may remain in the United States to pursue their career aspirations) or with different distributions of major field of study by country of origin (i.e., certain majors may provide more position availability for academic careers and there are different distributions in the major field of study by country or origin). Future research that explores these possibilities with advanced statistical analysis will provide interesting insight into differing career outcomes by country of origin.

When it comes to career experiences among non-U.S. citizens, clearly distinct patterns are found between those from Western, English-speaking countries and PhDs from East Asian countries—China, Korea, or Taiwan, specifically. In prior research, language barriers, lack of local experiences and references, cultural differences in ways of work or communication, and ultimately subtle marginalization of immigrants (e.g., because of a heavy English accent) are often cited as primary reasons why immigrant workers, even including highly skilled immigrants, experience inequality in the labor market (Iqbal, 2017; Purkayastha, 2005). According to a job application experiment (Oreopoulos, 2011), those with English names are more likely to be invited for job interviews than those with Chinese, Pakistani, or Greek names. Focusing on non-U.S. citizens with a master's degree, Jiang and Kim's work (2021) found that non-U.S. citizens from China reported significantly lower career outcomes—in terms of salary, major-job-match, and job satisfaction—than those from India. Confirming previous research findings, the current study raises an important question for the discussion about immigrants, career experiences, and possibly discrimination even against those who are highly educated, much sought after human capital in the U.S. workforce. A Confucian cultural background, especially for those from China, Korea, and Taiwan, may have played an important role in their career experiences, largely due to

differences in communication or working styles (e.g., reserved, passive communication styles or respect for authority), which in turn affect satisfaction levels with intrinsic and extrinsic employment factors. Future research that explores this possibility focusing on the impact of cultural background among non-U.S. citizens will expand our current understanding of career outcomes and experiences among non-U.S. citizens.

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10. Foreigners and strangers? Cultural differences among international academics in the UK

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Introduction

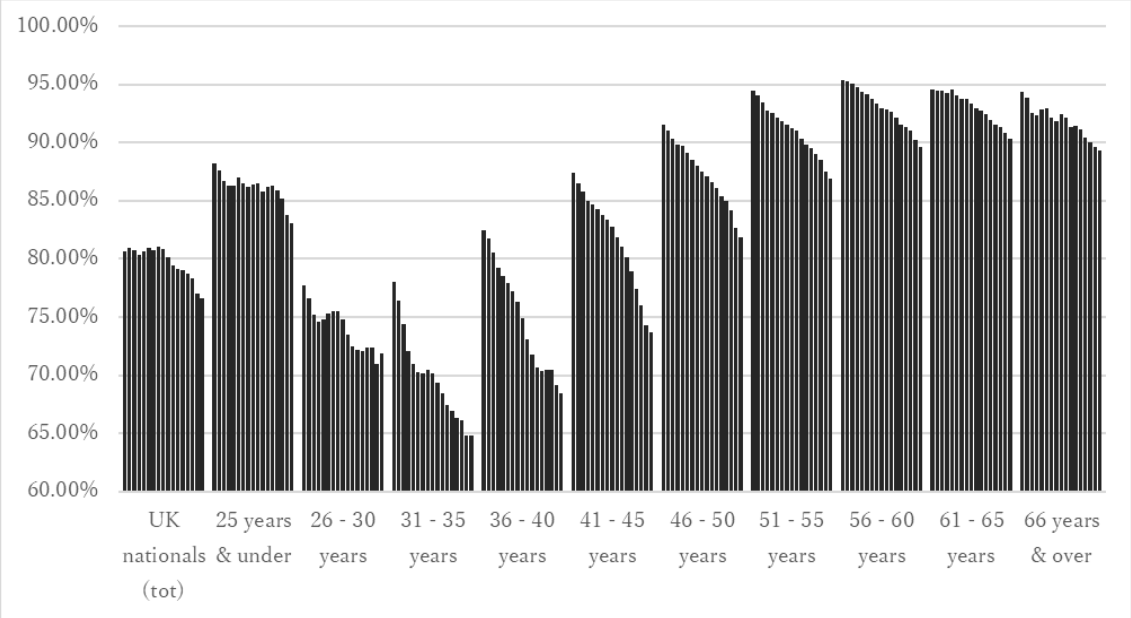
Migrant academics constitute approximately a third of UK's academic staff (Lenihan & Witherspoon 2018), and their number has been growing consistently (Locke & Marini 2021). Similar to patterns observed in countries such as USA (Kim et al. 2011), the numbers of migrant academics are particularly high in research-intensive and Russell group universities, especially in short-term posts. The available statistical data only allows us to see the numbers of foreign citizen academics in the UK, omitting other national background indicators such as the country of education. Nonetheless, most recent data indicates that the staff profile in UK universities may be changing. In 2020/21, the number of non-EU academics in the UK began to grow more compared to the numbers of EU academics, suggesting a possible impact of Brexit on academic mobility and employment patterns. From Figures 1, a steady decrease of UK nationals, also in years after Brexit, can be appreciated. The fall of UK nationals is particularly visible for the younger cohort age bands, the sharpest being for those aged 31-35 year-old.

Yet, although there is a considerable body of literature that examines international mobility motivations in academia, much less is known about the experiences of academics who move abroad, once they are stably in a host country. Our paper aims to address this less researched area in a key context like the UK.

In this increasingly international context, deploying Simmel's concept of the 'stranger' – one that unites distance and closeness and is contemporarily an insider and an outsider – is particularly interesting. Like the strangers that Simmel describes, migrant academics are far from their countries of origin and stay in another country for a longer period of time (see Welch & Huang 2021). Yet, they do not necessarily become 'insiders' to the new community either, although migrant academics could be 'strangers' to different degrees according to different dimensions. One among the others might be the Mertonian norms that would suggest total openness to any diversity, by nationality included. The

relatively high number of migrant academics in the UK may also make them less likely to become a 'token' foreigner compared to countries such as Japan (Brotherhood et al. 2019); Mainland China (Marini & Xu 2021); or South Korea (Kim 2016) where migrant academics are fewer and unlikely to trespass a certain percentage. Yet, it remains unclear whether their potential contributions as 'outsiders', such as the different ways to understand the academic life and work in the first place, are recognized, welcome, and also adopted. Likely, especially after the following strengthening reforms issued in 2011 to further marketize the higher education sector (Shattock 2012), the role of academics is expected to be less a matter of free and unaccountable intellectual enquiry, and a matter of being more focused on meeting their employers' performance standards, often based on metrics such as the number of highly-ranked journal publications (Kalfa et al 2018). In comparison to many other countries, in the UK metrics have invaded also the teaching side to an extent that cannot be neglected.

Figure 1. UK Nationals by age bands as percentage of total staff, time series from 2004/05 until 2020/21 (full time equivalent)



Source: HESA [Heidi plus: HESA Staff (excluding non-academic atypical) Full Time Equivalent (FTE) v1]

The paper is organized in the following way. The next section reviews literature about migrant academics, and migrant academics working in the UK. This is followed by a discussion of methodology, and an exposition of the first round of findings of this study. Discussion and conclusions situate the

experiences of migrant academics in the UK within the existing literature and interprets them in light of Simmel's concept of 'the stranger'.

Literature review

Literature has tended to adopt (more and less critical) variations of push-pull framework on the topic of international mobility in academia (Pustelnikovaite 2021; Huang 2018). However, abroad-educated law academics' experiences reported by Siems (2021) point at the importance of moving beyond this dominant framing. Siems (2021) reported that, in the UK, "different equals inferior", and that "UK academics often display a very "British empire" approach to international colleagues – i.e., they very rarely seem to fully appreciate and understand the diversity of foreign colleagues and the potential cultural enrichment they bring to the table.'" These experiences indicate a number of critical tensions that migrant academics experience at work and the presence of instances where they feel 'different', both areas that warrant further investigation.

Some of the most striking differences in staff by nationality appear in students' voice. Results from an empirical study finds that students' opinion about international in the UK are scattered between both above and below the average (Abu-Seada & Sherer 2011), demonstrating that being different deviates from the expectations both in positive and negative terms. It is not only a matter of what students perceive. Especially the feedback from students can reveal discrepancies between international staff's self-positionality and positionality students give to them (Bayley et al. 2017). Last but not least, and perhaps more importantly, the idea that students' feedback is relevant to English higher education practice may result as exaggerated to some internationals who don't find the rationale in simplifying the relationship with students in consumerist manners. Nevertheless, comments by students are useful to trace cultural expectations and difficulties by staff, as well in tuning with culturally implicit, and often tacit, assumptions bore by the hosting context. The way teaching is assessed in the UK interferes also with mobility. Fernando and Cohen (2016) make the point of changing evaluation criteria – namely the emergence in recent years of teaching assessment – is a key factor in hampering the easiness and transferability of Boudreau's forms of capitals.

As eloquently analysed in literature by Clifford and Henderson (2011), one of the main problems of being a migrant academic at a British university is the gap between their actual feeling of being "from abroad" and the (false) idea of cosmopolitanism promised by the increasing number of colleagues from abroad. For instance, once of their interviewees mentions that "my experience here is more that I feel like a foreign member of staff, and foreign brings about all the connotation of being

different, of being strange, of being alien, and not positive" (Clifford & Henderson 2011). One of the conditions marking a cultural difference is the use of English in the UK, even among the native English speakers. 'British subtleties and hiding truth behind words' (Kreber & Hounsell 2014), for instance, may constitute an unforeseen challenge for migrant academics, impacting their ability to successfully navigate and improve their position in the local hierarchies. Implicit norms, power relations, informal governance and hierarchies are all potentially common problems for any international in any country destination, whose *forma mentis* may be different from that of the place hosting them (Han 2021). To this regard, Paisey & Paisey (2018) provide a comparison between Scottish and Republic of Ireland practices in HR policies and middle management to check such similarities.

However, some of the most striking acknowledgements of 'difference' appear in students' feedback, one of the performance metrics in UK universities. Student feedback can reveal discrepancies between international staff's self-positionality and the positionality that students give to them by commenting on their accent and other indicators of a different national background (Bayley et al. 2017). Internationals pursuing teaching inevitably tend to blend experiences, but empirical evidence is that such possibility is inhibited (Luxon & Peelo 2009; Jiang et al. 2010). These instances also exemplify the Simmelian 'distance' which may transform in tangible negative consequences, such as "ending up in relatively lower positions in the labour market in the destination country" (Bilecen & van Mol 2017). Some may argue that migrant scholars are less likely to experience similar 'distance' in research (Kaulisch & Enders 2005). Even in research, however, each country has its own practices and performance evaluation systems with which migrant academics are expected to comply (Pustelnikovaite 2021; Musselin 2004), suggesting limits to international academic mobility and further instances of possible migrant academics' 'strangeness'.

Data and Methodology

The interviews analysed here are a subset of a wider study about the academic careers in the UK (Marini et al. 2021). Out of 119 academics interviewed in the main study, 27 were migrant academics. These academics can be grouped in three main categories: (1) Irish passport holders; (2) EU citizens; (3) non-EU internationals who are predominantly from "former British Empire Space" (e.g., Canada, Australia, New Zealand, South Africa, USA).

Table 1. Summary of international interviewees

Code	Repeated interview	Sex	Nationality	Contract	Title	Place last Education	Discipline
Case A int 1	No	M	IE	Permanent Full Time	DSc	non-English UK	STEM
Case A int 2	Yes	M	IE	Permanent Full Time	PhD	non-English UK	Social Sciences
Case A int 6	Yes	F	IE	Permanent Full Time	MA	EU	Social Sciences
Case A int 7	No	M	IE	Permanent Full Time	BA	England	Social Sciences
Case F Int 1	No	M	non-EU	Secondment from professorship	PhD	England	STEM
Case F Int 5	Yes	F	EU	Permanent Full Time	PhD	England	Humanities
Case F Int 7	Yes	F	EU	Fixed term FT	MA	EU	Social Sciences
Case F Int 8	Yes	F	non-EU	Permanent Full Time	PhD	non-EU	STEM
Case D int 5	Yes	F	IE	Permanent Full Time	PhD	non-English UK	Humanities
Case J int 6	No	M	non-EU	Fixed term FT	PhD	non-EU	Social Sciences
Case J int 7	No	F	EU	Permanent Full Time	PhD	England	Social Sciences
Case C int 2	Yes	F	non-EU	Permanent Full Time	PhD	England	Humanities
Case C int 4	Yes	M	non-EU	Fixed term FT	PhD	England	STEM
Case H Int 3	Yes	M	non-EU	Permanent Full Time	B.Soc. SCI	non-EU	Social Sciences
Case H Int 7	Yes	M	non-EU	Permanent Full Time	PhD	non-EU	STEM
Case P	No	F	non-EU	Permanent Full	MBA	non-English	Social

Int 1				Time		UK	Sciences
Case P Int 2	Yes	M	IE	Permanent Full Time	PhD	non-English UK	Social Sciences

Source: own elaboration from Marini et al. 2021

The study accounted for several dimensions of analysis, namely: mobility (extra-institutional career); promotions (mobility within the institution); key relationships (e.g., head of department); Brexit. Analysis indicated various instances of criticality, unfamiliarity or misunderstanding of the 'rules of the game' in UK academia. In various ways, these instances capture migrant academics' 'strangeness' (*Entfremdung*) to the UK system. It is the 'stranger' who both is not seen as welcome and is not willing (or unable) to adapt to the dominant hosting culture. There were, however, also cases where migrant academics recognized certain dynamics as being regular and not surprising, even if sometimes disadvantageous personally. These instances were interpreted as migrant academics being assimilated 'foreigners'. The idea of a 'foreigner' resembles the meaning captured in Latin roots of the word, namely the person who exited the forum and re-entered the original home, such as the descendants of the settlers of the British Empire who happens to be back in the ancestors' homeland. The latter find differences but also experience many commonalities, and experience their careers as navigating and enjoying the opportunities (the 'stranger' in the process of assimilation), resonating with the metaphor of the concertina (Whitchurch et al 2021). The outlined differences between 'strangers' and 'foreigners' are ideal-typical, and most academics' accounts presented evidence of both. The 'Discussion' section will unpack some of these tensions further.

Findings

The section is organized in the following way. The first subsection discusses the issue of mobility. The second provides insight into the interpersonal dynamics and the awareness and acceptance of cultural norms. The third is dedicated to the impact of Brexit.

Mobility

Hindrances such as family tend to make international less mobile than expected. For one younger

interviewees, academic career looks to be potentially mobile, but not promptly mobile, with long spans of time allowed to prepare a fair list of publications. This choice can be even slower if the geographic destination is one in particular. The loose conception of time is gained back when it comes to talk about work-life balance: in comparison to industry, universities were, at the time of events narrated in this case (late 90s), able to allow manage one's time in a more family-friendly manner. For many interviewees, nowadays in UK wide universities, probably even more in English and Welsh ones, this feature appears to be substantially modified in favor of a more hectic overall working experience (Whitchurch et al. 2021). [A1]

The experience of short stay abroad on top of already living abroad gives opportunities for possible new specializations. Family constraints, instead, lessen such employability opportunities and push towards remaining in the new country-home as persistent strangers. The opportunity to move would be guaranteed, sometimes, by exiting higher education as a sector. This would take the form of self-employment, or some professional activity often strictly connected to one's discipline taught in universities. Interestingly, this pattern applies to only some mid-advanced career staff, but largely not to early-career academics.

Key relationships and awareness of cultural norms

From this study we may appreciate that push and pull factors do not allow to fully understand international mobility in academia, and migrant academics' 'strangeness'. Other factors are also relevant. For instance: the career perspectives as perceived in a given specific moment; the managerial environment, which may change for one's point of view as soon as managers change in key roles; the management of others' career and development; the sudden events of redundancies; the relationship with students. Each of these conditions are relatively independent to one's choice, to one's performances, and also to one's capacity to predict them. On the other hands, the capacity to navigate each dimension in question depends not only by one's commitment or skills. It also depends by the capacity to understand the context and its main interplay of forces.

Relationships with managers are not only driven by personal considerations or idiosyncrasies. It depends by how a person recognizes the driving forces. For more teaching intensive English universities, for instance, research is nowadays much less important, and capacity to be effective and also efficient with students is key. Management is likely to be devoted to these essential issues representing the main part of the financial sustainability of the institution. The extent to which a new staff member coming from abroad can appreciate the reasons of certain practice, the better one will impact also one's positionality, recognition, and degree of connectedness in the local and middle level academic hierarchy,

typically at Department level. If a migrant academic feels that their contribution is recognized, and this person has good relationships with the key managers in one's place, considerations of leaving diminish as a result. Notwithstanding, the extent to which any employee understands how to interpret the academic life is a function of such good relationship with managers, some vignettes suggest. This capacity of buildings one's good position in the field may go beyond personal idiosyncrasies, for adhering to practices.

Failing to do so is not a demonstration of indolence. More likely it may bring to extra efforts that don't pay off.

> It is very difficult when you feel you have to get up at four o'clock in the morning […], that's my job, you know, but unfortunately, it also causes trouble because other people don't see it that way and they don't do it and then students get resentful and then potentially NSS scores are affected, so it's a real juggling act.

Interestingly, the same interviewee two years later for the second interview matured a more tailored approaching to teaching, navigating better the interplay of effectiveness and efficiency out of a self-detrimental trade-off experience. This encompasses also the way colleagues are implicitly supposed to communicate to others, which might be sensitive. She experienced, for instance, the following:

> We have some very strange structures at CASE_C that don't quite make sense to me so, that I could see would work a lot better but when you make suggestions, I've found the only way that people will take you seriously is if you do something, say, for example, I make a change in my teaching, […] I knew it was pointless me going to anyone and saying, everyone should maybe try this, absolutely pointless. So I do it myself and then suddenly people start noticing.

The issue of undertaking managerial functions is important as in the UK, those roles are not embedded in the academic role. They are disjunct instead also from a contractual point of view. Specific appointments build up relevant managerial positions. For instance, one person may have a percentage of contract in academic duties, and another percentage on managerial ones, often the latter securing both higher salary and a gateway to promotion in the traditional academic route. In this regard, as noted in literature (Huang 2018), ascension of internationals in leadership roles tends to be less frequent. The following example, instead appears to be an under-estimation of managerial necessities:

> I think quite often management is already seen as, again, another failed academic really, if you go down the managerial path, so if you're someone that's got a PhD but didn't even become an academic at all, trying to get to that, I don't know. I think there are a lot of tensions in universities around management. [H7]

Although tensions in relation to management are somehow inevitable, an essential starting point to mitigate such tensions, or at least for pigeoning those forces into fruitful solutions, would be that of realising the consequences of the absence of any management, or in what sense certain actions are considered good. Usually the respective metrics manager act against reflect in contemporary British universities impactful consequences.

The impact of Brexit

The Brexit impact on EU internationals in the UK is probably one of the most striking moments stressing the issue of one's identity in relation to the hosting country.

[A2] Interviewed EU internationals tended to re-realize that they are specific passport-holders after Brexit, although the UK never joined the Schengen Area, meaning that mobility was, even in pre-Brexit times, to some extent less easy in comparison to within-Schengen zone. Rather than impacting sharply on existing staff, Brexit is likely deemed, and observed, as impacting future choices – namely the new prospective entrants in the system as reported by some HR professionals. Numbers of new possible staff from abroad slowed down to apply from abroad in several UK universities since Brexit started to be progressively a reality (Referedum in 2016; Triggering Art. 50 in 2017; Brexit Deal in December 2020), according to some respondents in the position to have institutional evidence at hand. As reported by an interviewee talking about human resources department information in late 2019 [A6_2], people are seemingly considering the opportunity to apply as a cost in becoming part of a game they may wish to avoid altogether, whereas the existing staff are still waiting before considering to leave the UK.

Nevertheless, the sentiment of *becoming* a 'stranger', generated by Brexit, was considerable. It is possible, however, that Brexit uncovered dynamics that were already there, but academic internationals were not aware of how the wider British population feels about the presence of EU citizens in the country:

> In this country, there's this feeling that we are no longer welcome. Of course, I have to say, here, university, or in this research that I'm doing in particular, it's

> not like I feel discriminated or anything, even in CASE_F, it's a very nice city, but on your own, like, it makes you think what I'm doing here, like, I mean, we're here, like, working for this country, paying taxes in this country and then we are treated like second class citizens, but yeah, probably, yes, probably when that happened, it made me think, well, look, this is kind of the final sign I needed to go back.

This young researcher was frustrated by Brexit and was about to go back to her home country at the moment of interview, after having spent some years as research-only staff in a Russell Group university. She declares herself happy to disengage with the country. This case of proud resignation from an EU citizen for moving back to her country is nevertheless intriguing for its own development. Although the argument of leaving the UK for feeling unwelcome and under-appreciated is reported avowedly, the employment opportunity in her country would have less likely occurred without the experience in the UK itself, as the recruiting company is a British multinational.

Another interpretation in addition to that of Brexit turning the UK into less welcoming towards the international staff is possible. EU citizens might have interpreted the hosting country as 'theirs' although they may not have applied for the British passport. One interviewee, for instance, declared to have campaigned in London in person against Brexit before the Referendum took place. The idea of being an activist, or at least active in specific manifestation against Brexit, came with pride by this established scholar. Moreover, the participant was surprised by the relatively poor participation among colleagues in this issue. This position may mean that her experience, although of high intellectual profile, underestimated the English tradition of "absent minds" (Collini 2006), missing to align to English values. Her experience was to try to leave the UK, but the job interview undergone in her own country was not successful. Considering that her academic position is good and her academic performance suitable for top institutions, to leave the UK because of Brexit without a better employment is unrealistic. Instead, the higher risk would be to work in a place where, as she explains, gender culture would be lamentable, even if it is in her country of origin:

> Yeah, so I've been, you know, in 2018 and then this year as well, 2019, I've been through two institutions, multiple interviews […] Also, generally, for me, it's a sense of how open, how inclusive a place it, so the interview I had this year, on the basis of that interview, I didn't feel that this was a very inclusive place, where there's only one woman on the panel and the rest were all men, you know, it's quite telling, you know, those kind of things, so…

Discussion and Conclusions

Drawing on these findings, it is useful to speculate about the extent to which various groups of migrant academics in the UK are culturally extraneous or "just" foreigners. Those from the "British Empire Space" were sometimes less likely to be dissatisfied with the system, possibly having direct experience of similar, if not stricter, practices of managerialism or neoliberal universities. This may have happened for people with experiences in Australia, New Zealand, or USA. Nevertheless, also having done a PhD in the first place in the UK may lessen the extent to which an international understands and recognizes the actual way a system does operate. People of the former type (the extraneous), instead, tend to be more likely prone to discuss dissatisfactions and to don't see the point about certain practices they witness. These episodes are likely to fall into the wide but also vague category of managerialism. Rather than just feeling disadvantaged, the extraneous internationals are more likely to be stunned and unclear about why certain practices do exist altogether, which are the respective rationales, and the extent to which certain regulations or practices might produce the declared expected outcomes.

Overall, the concept borrowed from Simmel to analyse the extent to which internationals are extraneous or assimilated is relevant also for other implications. This approach more than others can depict to what extent an academic context is really prone to cosmopolitan values. Whilst this is sometimes assumed as for granted inasmuch the presence of many internationals (both staff and students) would be ipso facto a demonstration of cosmopolitanism, reality is more complex. For the UK case, it is important to understand what Brexit changed and will change. It would be novel also to consider Brexit the effect of some wider sentiment in the public opinion, rather than just the cause of, say, losing specific EU funding schemes or general fall image and reputation – a couple of the most common aspects discussed by interviewees in relation to Brexit.

Considering that these data have been collected after Brexit happened, at least after the Brexit Referendum, it is undetermined whether interviewees, especially EU ones, might continue to express similar worried opinions in the longer term, especially once Brexit will have produced all its implementation effects. It is also important to acknowledge that the number of years spent in the country, the moment people started to live in the country, and also the PhD attainment place, all these factors play a strong role in the cultural socialization process. These factors are all relevant in understanding the extent to which an international is likely to see his/her own hosting place as "strange" or his/her own. It in unclear, for instance, whether EU internationals may feel more assimilated to British culture if in the country for longer time, or whether those EU who stayed in the UK for longer time felt a more acute shock from this watershed. Yet, it is unknown at the best of our knowledge which is the percentage of

internationals who acquires UK passport, which is likely to have been accelerated at the wake of Brexit for the purpose of securing a safe condition in the UK whatever negotiations would have brought to. International academic staff becoming legally locals should be covered in the future within the topic of academic profession, also outside the UK. The fact that academics may have multiple passports is also relevant. For instance, some of these interviewees discussed in this paper were in this particular position, making the definition of internationals more challenging in the first place. Last, for many non-internationals the issue of being strangers is not totally disconnected. Studies about second and third generation immigrations consolidated in literature, and this is as well an under-investigated pattern for countries having strong fluxes of immigration and also being young states, like the US or Australia are.

The areas of concerns this study highlight are predominantly that of realizing that internationals cannot be siloed. There are implications for the vitality of the profession per se that have been already advanced, although not with an ultimate solution. As already reported in some contributions in the field (Kreber & Hounsell 2014 about attractiveness and retention of international stars; Minocha et al. 2019 about internationalization of curricula and teaching practices; Salt & Wood 2014 in relation to HR policies for transnational universities; Wood & Salt 2018 for the changing HR practices British universities are adopting abroad; Siems 2021 in relation to simplistic expectation about teaching subjects; Walker 2015 about capacity to attract internationals; Shattock & Horvath 2020 in relation to the arbitrary function of the profession altogether), the increasingly dependence from internationals engenders byproducts. Although it would be a simplistic position that of opposing lack of attention towards cosmopolitan influences, any analyst ought to appreciate what global higher education providers are in these days: universities needing to secure standardized and standardization processes; organizations meeting increasing and potentially entropic metrics that are in relation to quality assurance evidence; management of higher volumes of budgets and costs. In this conundrum, it is no surprise that the trickier cultural challenges that global higher education encompasses may result as a non-priority.

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二部　日本の外国人研究者および外国人雇用者の分析（日本語と英語）

Part II International Academics in Japan and Their Japanese Employers

11.　日本の公的研究所における外国人研究者の特徴に関する研究

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研究背景

21 世紀に入ってから、日本の大学の国際的競争力を高めるために、政府は次々と国際化を推進する政策や事業を打ち出した。たとえば、2008 年に策定された「留学生 30 万人計画」はその代表的一つである。また、平成 25 年 5 月 17 日、世界に勝てる大学改革の一環として、安倍総理が「成長戦略第 2 弾スピーチ」の中で示した「国立の 8 大学で、今後 3 年間の内に、1500 人程度を、世界中の優秀な研究者に置き換えます。これにより、外国人教員を倍増させます。」とのスピーチを日本アカデメイアで行った。この内容は、その後の「スーパーグローバル大学創成支援」の内容を支えるものであった。以来、文科省の統計によると、日本の大学で雇用された本務外国人教員数は 2000 年の 5038 人から 2020 年の 9187 人に増加した（文部統計要覧（平成 13 年版）、文部科学統計要覧　令和 3 年版）。

このような背景から大学における外国人教員に関する研究が近年、進められてきている（米澤・石田、2012、黄・大膳、2020）。具体的には、日本国内では、大学における外国人教員の来日動機（Huang, 2018a）や、生活と活動(Horta and Yonezawa、2013)、直面課題、役割に関する研究があるが(Huang、2018b, Huang, et al., 2019）、Murakami (2009)による国立研究所を含む非営利研究機関、民間企業の研究開発部門における外国人研究者、そして国立大学と私立大学の理工系における外国人教員に関する来日の動機に関するアンケート調査分析以外に、公的研究機関に所属している外国人研究者に関する研究、とりわけ彼ら・彼女らの人口学的な特徴に関する考察は極めて少ない。

研究目的

以上の背景を踏まえて、この研究は、日本の公的研究所におけるポスドクを含む外国人研究者関連情報と彼ら・彼女らを対象に実施したインタビュー調査結果に基づいて、日本を代表する理工系国立研究開発法人研究所における外国人研究員の特徴、彼ら・彼女らの来日動機、役割、直面する課題などを分析することを目的としている。この研究目的を達成するために、具体的には、以下のリサーチクエスチョンを論じる。1.日本の公的研究所における外国人研究者に関する特徴が何だろうか？この研究を通じて、今後の日本における人文系および理工系研究所における外国

人研究者の受け入れと活躍を推進すべき方向性および改革方策について、参加者も交えながら検討を試みていきたいと考えている。

データ収集方法

2020 年 8 月から 2021 年 5 月にかけて日本の大学共同利用機構法人や国立研究開発法人等のホームページ上から外国人研究者やスタッフ等と思われる者を探索し、そのうち、研修生、実習生、スタッフと技師を除いて、関係外国人研究者の名前、所属、プロフィールのデータ等を収集した。

調査結果

まず、勤務先等のホームページに掲載されている公開情報に基づいて日本を代表する一部の人文系および理工系国立研究開発法人研究所における外国人研究員の特徴に関する分析を行った。

表 1 は 2021 年 5 月中旬の時点では、人間文化研究機構、自然科学研究機構、および理化学研究所のホームページ上から、学位別や職名別等にみる外国人研究者と思われる者に関する特徴をまとめた結果の一部である。

彼ら・彼女らの主な特徴として以下の点が挙げられる。まず、外国人研究者の最大数は博士号取得者である。次に、日本から最終学位を取得した人が最も多かったが、人間文化研究機構と比較して、理研では中国または米国で最終学位を取得した人が多かった。第三に、彼ら・彼女らの多くは日本でポスドク研究を行っており、特に理研の場合はそうである。最後に、彼ら・彼女らの最大数は研究員という職名を持っていた点である。

表 1 外国人研究者の特徴（学位や分野等別）

大学共同利用機関法人等	所属研究センター等	学位		最終学位後取得地				**日本でのポスドク経験**	研究分野・身分				
		博士号	修士号	**日本**	中国	米国	その他		所長	教授	准教授	助教	**研究員**
人間文化研究機構	6	33	2	26	0	1	5	2	1	6	7	5	20
自然科学研究機構	9	22	1	5	3	2	4	5	0	1	2	6	10
理化学研究所	13	343	0	91	47	34	171	102	0	0	0	0	318

表 2 は性別・国別・年齢別にみる外国人研究者の特徴を分析した結果である。彼ら・彼女らの主な特徴は以下の点を挙げられる。まず、男性の外国人研究者は女性よりはるかに多いであるが、相対的にみると、人間文化研究機構における女性の外国人研究者の数は多くなっている。次に、彼ら・彼女らの最大数は中国人（118）であり、インド人（29）、アメリカ人（26）がそれに続く。最後に、彼ら・彼女らの最大数は 25-35 歳の若い外国人研究者である。

表 2　外国人研究者の特徴（性別・国別・年齢別

大学共同利用機関法人等	所属研究センター等	性別		国籍							年齢			
		男性	女性	**中国**	米国	韓国	英国	ドイツ	インド	その他	**25-35**	**36-45**	46-55	Above 55
人間文化研究機構	6	27	17	13	1	7	0	1	3	9	4	12	8	5
自然科学研究機構	9	25	5	8	2	5	0	0	1	2	10	9	1	3
理化学研究所	13	298	75	118	26	23	13	14	29	79	152	133	30	18

まとめ

以上の整理・考察を踏まえて、日本の公的研究所における外国人研究者に関する主な特徴については、以下の通り二点をまとめることができる。

一つ目は、全体的には、日本の大学を卒業した中国出身の方々、男性、若手、博士号取得者は最大のグループである。二つ目は、分野や所属研究機関の点で性別や学位の違いが見られる。

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文部統計要覧（平成 13 年版）

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12. 日本の公的研究機関における外国人研究員雇用者の分析-理化学研究所を対象として-

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背景と目的

大学という組織は、その主要な活動である教育活動と研究活動をより有効に促進するために、大学教員を雇用してそれらの活動を促進している。

特に、グローバル化する社会の中で、大学が成果を出すための方途の 1 つとして、外国人教員を雇用して教育活動や研究活動を国際化しようと努力している(黄、大膳 2020)。

日本学術振興会でも上記の活動を支援するために、諸外国の優秀な研究者を博士号取得前後から長期・短期に日本の大学等研究機関に受け入れ、日本の研究者との共同研究、討議、意見交換等を行うことで、互いの研究の進展と日本の研究環境の国際化を支援するフェローシッププログラムを実施している[1)]。

この章では、STEM 分野の国立の研究所において、外国人研究員はどのような経緯で雇用されているのか、外国人研究員には何が期待されているのか、外国人研究員の雇用に際してしてどのような課題があるのか等を明らかにするために、日本における STEM 分野の研究機関の一つである理化学研究所[2)] における 3 分野の研究チームリーダーを対象として、半構造化インタビューを通して情報を収集した。

インタビュー方法については、国立研究開発法人の 1 つである理化学研究所において外国人研究員を雇用している 3 分野(工学系、生物学系、物理学系)の研究室主宰者（PI あるいはチームリーダー) 3 名を対象として 2020 年 10 月から 2020 年 11 月にかけて半構造化インタビュー調査を実施した[3)]。

インタビューの内容は、「年齢」「どこで学位を取得したか」「ポスドクの経験」「職歴及び今の仕事に就いた経緯」」「現在の部署の仕事内容や何が期待されているか」「研究チームに何人の研究者や事務職員がいて、その内に何人の外国人研究員がいるか」「外国人研究員をどのような基準や方法で雇用しているか」「外国人研究者に何を期待しているか」「外国人研究員への支援体制」「あなたの管理部署で外国人研究者を生かしていくために、現在工夫していることや今後何が必要か」等である。

以下では、1 節において、研究リーダーの所属している理化学研究所とはどのような組織なのかについて確認した後、2 節では、3 分野の研究チームリーダーへのインタビューした内容をまとめ、最後に、これらのインタビューから自然科学分野の先進的組織において外国人研究員の雇

用がどのような理由で雇用されているか、そのためにどのような課題があるか、についてまとめるとともに、研究所における外国人研究員の雇用についての今後の研究課題を提示した。

1節　理化学研究所とは

まず、理化学研究所とはどのような組織なのかについて説明したい。

理化学研究所は、日本で唯一の自然科学の総合研究所として、物理学、工学、化学、数理・情報科学、計算科学、生物学、医科学などに及ぶ広い分野で研究を進めている。

当研究所は、1917 年（大正 6 年）に財団法人として創設され、戦後、株式会社科学研究所、特殊法人時代を経て、2003 年（平成 15 年）10 月に文部科学省所轄の独立行政法人理化学研究所として再発足し、2015 年（平成 27 年）4 月には国立研究開発法人理化学研究所になった。研究成果を社会に普及させるため、大学や企業との連携による共同研究、受託研究等を実施しているほか、知的財産等の産業界への技術移転を積極的に進めている。

表 4 は、総務省統計局によって調査された 2020（令和 2 年）に発行された『科学技術研究調査』内の表 1 と表 2 に基づいて研究者数と研究費について示したものである。

その結果、国立研究開発法人は、国立大学等に比べて、①研究者以外の支援員的立場の人員が多いことと、②研究者 1 人当りの研究費が約 7 倍多く、特に、外部からの受け入れ研究費が約 30 倍多くなっている。

表 1 国立研究開発法人

内閣府所管	日本医療研究開発機構
総務省所管	情報通信研究機構
文部科学省所管	物質・材料研究機構
	防災科学技術研究所
	量子科学技術研究開発機構
	科学技術振興機構
	理化学研究所
	宇宙航空研究開発機構
	海洋研究開発機構
	日本原子力研究開発機構
厚生労働省所管	国立がん研究センター
	他
農林水産省所管	農業・食品産業技術総合研究機構
	他
経済産業省所管	産業技術総合研究所
	他

表 2　国立研究開発法人の特徴

出典 総務省統計局 2020（令和２年）「科学技術研究調査」内の第１表、第２表より作成

研究主体及び組織	研究実施企業，研究実施非営利団体・公的機関及び大学等数 (a)	研究関係従業者数（人） Number of persons employed in R&D (persons) 総数 A	研究者 B	研究補助者 C	技能者 D	研究事務その他の関係者 E	内部使用研究費（100万円） Intramural expenditure on R&D (million yen) 総額 a	人件費 b	原材料費 c	有形固定資産購入費 d	無形固定資産購入費 e	リース料 f	その他の経費 g	受入研究費（100万円） h	外部支出研究費（100万円） i
1 総数	18,554	1,102,500	880,954	69,380	58,450	93,718	19,575,711	8,531,773	2,550,135	1,733,768	229,742	80,559	6,449,736	3,895,961	3,196,966
2 企業 (1)	13,868	617,060	507,473	43,594	37,765	28,230	14,212,065	5,588,421	2,134,126	1,142,657	217,373	38,987	5,090,500	1,270,449	2,447,969
3 非営利団体 (2)	423	12,988	8,307	1,252	1,554	1,875	240,971	79,481	42,569	31,089	1,366	1,727	84,738	191,543	19,610
4 公的機関 (3)	502	61,717	30,532	8,652	5,935	16,598	1,402,496	443,256	164,266	207,231	7,462	12,227	568,054	1,687,011	683,426
5 国営 (4)	25	4,610	2,332	245	124	1,909	176,802	36,098	72,435	7,870	125	925	59,349	6,496	8,493
6 公営 (5)	389	16,254	9,255	2,306	2,081	2,612	167,215	101,238	9,274	16,476	71	1,877	38,280	12,514	1,336
7 特殊法人・独立行政法人 (6)	88	40,853	18,945	6,101	3,730	12,077	1,058,479	305,920	82,557	182,885	7,266	9,425	470,426	1,668,002	673,597
8 うち研究開発法人 (7)	33	34,810	15,493	5,307	3,228	10,782	961,773	260,402	75,318	171,520	6,949	8,953	438,632	1,598,360	666,235
9 うち国立研究開発法人 (8)	**27**	**34,285**	**15,213**	**5,234**	**3,201**	**10,637**	**947,134**	**255,693**	**74,983**	**166,621**	**6,920**	**8,810**	**434,107**	**1,335,535**	**413,187**
10 大学等 (9)	3,761	410,735	334,642	15,882	13,196	47,015	3,720,180	2,420,615	209,174	352,790	3,540	27,618	706,444	746,958	45,961
11 国立 (10)	**1,059**	**195,881**	**148,399**	**9,446**	**10,491**	**27,545**	**1,456,564**	**851,330**	**108,981**	**136,142**	**1,254**	**19,706**	**339,151**	**495,293**	**36,085**
12 公立 (11)	255	30,273	25,800	1,387	400	2,686	234,447	171,916	7,333	19,089	171	847	35,091	32,779	1,772
13 私立 (12)	2,447	184,581	160,443	5,049	2,305	16,784	2,029,170	1,397,370	92,859	197,559	2,116	7,065	332,201	218,886	8,103

	B/A	C/A	D/A	E/A	a/B	b/B	c/B	d/B	e/B	f/B	g/B	h/B	i/B
1 総数	79.9%	6.3%	5.3%	8.5%	22.2	9.7	2.9	2.0	0.3	0.1	7.3	4.4	3.6
2 企業 (1)	82.2%	7.1%	6.1%	4.6%	28.0	11.0	4.2	2.3	0.4	0.1	10.0	2.5	4.8
3 非営利団体 (2)	64.0%	9.6%	12.0%	14.4%	29.0	9.6	5.1	3.7	0.2	0.2	10.2	23.1	2.4
4 公的機関 (3)	49.5%	14.0%	9.6%	26.9%	45.9	14.5	5.4	6.8	0.2	0.4	18.6	55.3	22.4
5 国営 (4)	50.6%	5.3%	2.7%	41.4%	75.8	15.5	31.1	3.4	0.1	0.4	25.4	2.8	3.6
6 公営 (5)	56.9%	14.2%	12.8%	16.1%	18.1	10.9	1.0	1.8	0.0	0.2	4.1	1.4	0.1
7 特殊法人・独立行政法人 (6)	46.4%	14.9%	9.1%	29.6%	55.9	16.1	4.4	9.7	0.4	0.5	24.8	88.0	35.6
8 うち研究開発法人 (7)	44.5%	15.2%	9.3%	31.0%	62.1	16.8	4.9	11.1	0.4	0.6	28.3	103.2	43.0
9 うち国立研究開発法人 (8)	**44.4%**	**15.3%**	**9.3%**	**31.0%**	**62.3**	**16.8**	**4.9**	**11.0**	**0.5**	**0.6**	**28.5**	**87.8**	**27.2**
10 大学等 (9)	81.5%	3.9%	3.2%	11.4%	11.1	7.2	0.6	1.1	0.0	0.1	2.1	2.2	0.1
11 国立 (10)	**75.8%**	**4.8%**	**5.4%**	**14.1%**	**9.8**	**5.7**	**0.7**	**0.9**	**0.0**	**0.1**	**2.3**	**3.3**	**0.2**
12 公立 (11)	85.2%	4.6%	1.3%	8.9%	9.1	6.7	0.3	0.7	0.0	0.0	1.4	1.3	0.1
13 私立 (12)	86.9%	2.7%	1.2%	9.1%	12.6	8.7	0.6	1.2	0.0	0.0	2.1	1.4	0.1

２節　研究チームリーダーへのインタビュー

この度、理化学研究所で研究チームのリーダーを務めている３分野(工学系、生物学系、物理学系)各 1 名、計３名の教員を対象として研究チーム内に雇用している外国人研究員に関してインタビューした。

以下には、この分野の順に、彼らはどのようにキャリアを積んできたのか、彼らはどのような理由で、どのような方法で外国人研究員を雇用してきたのか、等についてインタビューによって得ることのできた情報を提示したい。

2.1 工学系チームリーダーへのインタビュー

2020 年 10 月 22 日 13 時から 1 時間程度、工学系の 40 歳代の研究チームリーダーにインタビューした。

彼は 2016 年から雇用されており、東京大学の客員准教授でもある。

2.1.1 学歴

彼は、慶応義塾大学で学士号を取得、カリフォルニア大学サンタバーバラ校で修士号と博士号を取得後、スタンフォード大学にポスドクとして 1 年半在籍していた。

2.1.2 職歴

ポスドク後、帰日し、さきがけ[4)] に 4 年間選択され、その間に、東京大学工学系研究科の戦略拠点としての役割を担っている総合研究機構の准教授として 9 年間在籍し、理化学研究所に移籍した。

なお、東京大学総合研究機構から理化学研究所に移動した理由は、東京大学総合研究機構では 5 年任期の雇用であったためである。実際には、5 年任期の後、3 年延長、さらに 2 年再延長の途中での移動であった。

理化学研究所を移動先として選択した理由は、会議が少ない、教育活動がない、などの研究を進めていくに望ましい環境にある。

2.1.3. 研究室運営

研究チームリーダーは、理化学研究所の開拓研究本部と研究センターに所属して研究を進めている。

開拓研究本部では研究費がついていないので外部資金を獲得する必要がある（スタートアップ資金が初めの 5 年間付いている）。研究センターには予算がついており、それを用いて研究室を運営している。

研究室には、インタビュー当時、外国人研究員 4 名、定年制研究員 1 名、ポスドク 7 人、アシ

スタント１人、パート事務員２名が所属している。

2.1.4 どのような考えや方法で外国人研究員を雇用しているか

研究員を雇用するために、理化学研究所のホームページ上での公募に加えて、JST の研究者人材データベースにも絶えず公募情報を登録している。なお、日本人を研究員として雇用する場合は、一本釣りが多い。

ポスドクを採用するときには、しっかりとした研究成果を出してくれるかということを踏まえている。なぜなれば、研究室を卒業後も、一人前の教員になれるかということが大切で、将来、大学で教員になれるような研究者でないと採用しない。

しかし、意図的に外国人を雇用しているわけではなく、優秀な研究者を採用しようとした結果、外国人研究員を雇用することとなった。

研究室の使用言語は基本的に英語であるため、外国人研究員に日本語能力を求めてはいないが、もし理化学研究所の任期が切れた後、外国人研究員がキャリアを日本国内で積むことを希望している場合には日本語能力が重要である。

2.1.5 外国人研究員に何を期待するか

日本人研究員と外国人研究員に期待していることには変わりなく、英語で優秀な研究成果（論文）を出してもらうだけである。

外国人研究員が来日のためにビザ申請する際のサポートを理化学研究所で行ってくれる。

研究室に、2 名のパート事務員がおり、彼らが外国人研究員のサポートも行っている。英語はできないが、ジェスチャーなどを交えながら行っている。

2.2 生物学系チームリーダーへのインタビュー

2020 年 10 月 22 日 14 時から 1 時間程度、60 歳代の生物学系研究チームリーダーにインタビューした。

2.2.1 学歴

彼は、京都大学理学部・理学研究科(生物物理学専攻)で学士号、修士号、博士号を取得し、米国のコロラド大学ボールダー校でポスドクを 3 年間経験している。

2.2.2 職歴

帰国後、1990 年から国立遺伝学研究所に就職し研究を進めるとともに、総合研究大学院大学遺伝学専攻として、大学院生を受け入れ、教育も行ってきた。その後、2000 年から理化学研究所に移動した。並行して、神戸大学理学研究科、兵庫県立大学理学研究科にも所属し教育を行っている。とはいえ、現在の主な仕事は研究活動であり、その他に、年に数回、授業を開講したり、運営会議に参加している。

2.2.3 管理部署には何人の研究者や事務職員がいるか

現在、研究室には、研究員：4 名（うち 2 名が外国人）、大学院生：2 名（うち 1 名外国人）、テクニカルスタッフ 2 名、パートタイマー2 名、基礎科学特別研究員 1 名(日本人)となっている。

2.2.4 どのような方法で雇用したか、彼らの雇用形態は

外国人研究員を雇用する際に、慎重に行っており、基本的には一度、研究室に来室してもらっている。その際に、事務職員とも会い、渡日後のサポートについても話しをしてもらっている。

理化学研究所で、特定の国・地域からの採用に制限をかけることはしていないが、女性の雇用比率をあげるようには言われている。しかしながら、あくまでも採用は研究室の判断に任されている。

外国人研究員の能力を見定めて雇用を行っている。すべて知り得ることは難しいが、問題点がある場合は、採用後に関係を構築する。

例えば、ある外国人研究員の場合は、本人から研究員希望のメールをもらった後で、その研究員がいる国に訪問した際に面接を行い、評価して雇用した。外部資金で 1 年ごとの契約雇用しており、現在は 5 年目である。10 年を超えない範囲内で、研究のパフォーマンスに基づいて雇用継続の有無を評価している。

2.2.5 外国人研究員に何を期待するか

外国人研究員には、日本人研究員と同様に優れた研究を行い、優秀な論文を書くことを期待している。すなわち、日本人、外国人問わず優秀であれば採用している。

普段の会話は基本的に英語を使っているため、外国人研究員に日本語の読み書きは条件としていない。

外国人研究者を採用するのは国策としては良いことである。彼らは、研究意欲があり、研究成果もあげており、採用を推進する必要がある。その結果、日本の研究成果の評価が良いものとなる。研究室終了後のキャリアとして、外国人研究員の多くは、母国に帰国して大学教員になっており、その結果、その後の研究ネットワーク形成にも寄与している。

近年、外国人研究員を受け入れるに際して、研究成果の機密順守などについて議論されているが、むしろ生物学分野では、研究室間で材料などを提供・共有しあっており、その材料を使っての研究成果が未発表のものについては、一定期間伏せておいてもらうことがある。これは、生物学分野の研究コミュニティでの標準である。

2.2.6 外国人事務職員の役割は

研究室に事務職員が 1 名おり、英語で対応できる人ということを条件として雇用している。研究センターとして初渡日の外国人研究者の場合、センターとしてサポートする職員（1 名）を採用している。外国人研究員が家を借りたり、ビザを取得したりする際にサポートしている。

2.3 物理学系チームリーダーへのインタビュー

2020 年 10 月 22 日 13 時から、物理学系の 40 歳代の研究チームリーダーへのインタビューを行った。

2.3.1 学歴

筑波大学で物理学の学士号と修士号を取得後、コペンハーゲン大学ニールスボーア研究所で博士号を取得し、その後、米国ブルックヘブン国立研究所、独国マックスプランク原子核研究所と GSI でポスドクとして研究を続けた。

2.3.2 職歴

彼は、2018 年から理化学研究所に勤務しているのみならず、独国の GSI Helmholtz Center for Heavy Ion Research と中国の蘭州大学にも所属している。

ポスドク後、ドイツで研究するつもりだったが、中国から声かかり、1000 人計画申し込んだが、選ばれなかった。そのため、理化学研究所の公募に応募し、採用された。その後、中国蘭州大学の地元政府が資金を払い彼を雇用した。

独国では研究グループリーダーとして全仕事量中 20%貢献しており、中国では、年間に SCI トップ論文 1 篇とその他 2 篇及び外部資金を年間 10 万元か 3 年間に 30 万元取得することが期待されている。その他の時間を、主任研究員として理化学研究所に貢献している。

中国と独国で自身の専門分野の研究を広げることがミッションとなっている。

現在、仕事のほとんどが研究活動で、教育活動を年に 1、2 回、管理・運営活動は最低限度行っている。

2.3.3 研究室運営

研究室は、無期雇用研究員 3 名（中国人 2 名、日本人 1 名）、有期上級研究員 1 名（日本人、他の研究室と兼務）、ポスドク研究員 6 名（日本人 3 名、ご自身支出 2 名、東北大学支出 1 名）、秘書 1 名、となっている。さらに、博士課程学生 3 名（パキスタン GIK1 名、蘭州近代物理研究所 1 名、岐阜大学 1 名）がいる。

2.3.4 どのような方法で雇用したか？　雇用形態は？

中国人研究員の場合、ドイツにいたときにポスドクをしていたので、優秀であることを知っていた。東大の先生からの強い推薦があったため雇用した。

日本人研究員の場合、1 名は、普通に公募して、優秀であることから雇用した。もう 1 名についても公募に応募してきたが、その際、彼の元上司が知り合いであったこともあり、雇用している。

2.3.5 外国人研究員に何を期待するか？

研究員を雇用する際、外国人を意図的に雇用しているわけではなく、研究者として優秀な人を採用したいと考えている。

日本人のポスドクを雇用する場合は、ネットワークを活用し、採用を進める。

日本人研究員と外国人研究員に期待していることに違いはなく、英語で優秀な論文を書くこととである。

なお、外国人研究員にネットワーク構築を期待しているわけではなくて、研究リーダーのネットワークがすでにあるため、それを使って研究成果を出し、世界を引っ張るリーダーとしての成長を期待している。

2.3.6 事務職員の役割

外国人研究員の銀行口座の開設、市役所での手続きなどは私設秘書が担当している。彼女は、国際経験が有る。

理化学研究所として、外国人研究員のビザ申請のサポートを行っているが、外国人研究者に対して、理化学研究所としてのサポート部署の充実が必要だと考えている。

まとめ：研究成果を高めるためのチーム作り

資金の面でも、人的支援の面でも恵まれている理化学研究所では、若手研究員や特別研究員を毎年 200 名近く雇用する制度が用意されている。

理化学研究所の研究チームリーダーは、自身の研究課題に取り組むために、この制度を使って有能な若手研究者を国籍とは関係なく雇用し、研究チームを構築している。

すなわち、理化学研究所は、STEM 分野の研究所であるため、研究活動の主要な言語は英語であり、雇用する研究者が日本人であるとか外国人であるとかなど国籍はあまり関係ない。しかし、理化学研究所を退職して日本の大学で教鞭をとりたいとの希望を持った外国人研究員に対しては、日本語能力を要求している。

確かに、理化学研究所の外国人研究員は研究者として研究活動を日本語と関係なく推進することはできるが、地域社会における生活を送るうえで日本語の必要性が認識されている。特に、配偶者や子どもにとっては特にそうである。そのため、日本語授業の開設、銀行口座の開設、子どもの学校、などへの支援が理化学研究所に求められている。現状では、自身の研究室で雇用している事務員が個別にたいおうしている。

若手研究者は、この恵まれた研究環境や国際的に研究を展開している優秀な研究リーダーとの共同研究を目指して外国から来日する者が多い。

優秀な研究者を雇用するために、人事において公募制度の重要性が指摘されているが、理化学研究所の研究員の雇用は完全公募とは言えない。優秀な研究リーダーが、自身の研究の促進にと

って望ましい若手研究員を面接や他の研究者の推薦などに基づいて一本釣りで雇用する場合も多い。

以上、インタビューを通して明らかになったことは、STEM 分野の研究環境に恵まれた研究組織において、優秀な研究リーダーが、優秀な若手研究員を雇用して研究チームを構築し、研究成果を出していくという仕組みで活動が行われていることが理解できた。

以上は、STEM 分野の研究所における外国人研究員雇用の様子である。

今後は、人文・社会科学系の研究所の研究チームリーダーに対してインタビューを行い、STEM 分野における外国人研究員の雇用とよどのように異なっているのか、どのような課題があるのかについて調査をする必要がある。現在、徐々に調査を進めており、ある程度の人数のインタビューができたならばその結果を報告したい。

注

1）https://www.jsps.go.jp/j-inv_researchers/index.html

2）2007 年から 2017 年の 11 年間に発表された学術論文のうち、どれだけが被引用率上位 1％以内に入っているかを調べた結果、東京大学、京都大学に続いて、理化学研究所が 3 位に入っていた。

https://univ-journal.jp/20424/?show_more=1　(2020 年 3 月 11 日調べ)

3）インタビュー対象となった研究者については、当時、理化学研究所の理事であった原山優子氏を通して、理化学研究所内の物理学系、生物学系、工学系の教員を 1 人ずつ紹介してもらった。ここに謝意を示したい。

4）国立研究開発法人については、以下の URL を参照のこと。

https://jinzaii.or.jp/56167

5）「さきがけ」とは、国が定めた戦略目標の達成に向けた独創的・挑戦的かつ国際的に高水準の発展が見込まれる先駆的な基礎研究を支援する科学技術振興機構の活動である。

引用・参考文献

黄福涛, 大膳司編(2020)『高等教育研究叢書 : 外国人教員に関する国際比較的研究』154、広島大学高等教育研究開発センター。

13.　日本の公的研究機関における外国人研究者の分析
ーインタビュー調査を中心にー

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はじめに

二部１で黄が述べているように、日本の大学における外国人教員に関する先行研究は多かったが（黄・大膳、2020；徐、2005；李、2020；米澤・石田、2012)、日本では唯一 Murakami（2009）のみが公的研究機関における外国人研究者に関する研究を行っているに過ぎず、したがって、これまでの研究において公的研究機関での外国人研究者の特徴、来日動機や直面している課題については十分に明らかになっているとは言えない状況にある。

そこで本研究では、日本の公的研究機関における外国人研究者の特徴、来日動機や直面している課題について、インタビュー調査に基づいて検証することを目的とする。その上で本研究では、日本の公的研究機関における外国人研究者が入職に当たって、どのような関係にある人物が仲介しており、仕事を得ることにつながっているのか、というリサーチクエッションを設定して検討を行う。本研究によってもたらされる成果として第一に、日本の公的研究機関における外国人研究者の役割と貢献を明らかにすることができる。そしてその効果や課題についても解明することが期待できる。第二に、日本の公的研究機関における外国人研究者の貢献を最大化するために有効な方針や対策についても提言することもできる。

研究方法

本研究では、日本にある 27 の公的研究機関から、調査に協力いただけることとなった 4 つの公的研究機関における外国人研究者 18 名に 2020 年 10 月～2021 年 7 月にかけて、半構造化インタビューを Zoom にて行った。インタビュー対象者のプロフィールは表 1 の通りである。回答したくない項目については答えなくて良いことを説明した上で、それぞれ 1 時間ずつインタビューを実施した。インタビュー調査の項目としては、1）インタビュー対象者自身に関する事柄、2）教育・研究背景、3）モチベーションと仕事の役割、4）課題と展望、である。具体的な調査の項目に関しては表 2 に示している。インタビュー調査後、テープ起こしを行い、質的データ分析ソフト MAXQDA を用いて分析を実施した。

表1 インタビュー対象者のプロフィール

インタビュー実施日	対象者	年齢	専門	雇用形態	博士取得大学	国籍・地域
2020年10月22日	A	30代	理工系	任期雇用	奈良先端大学院大学	中国
2020年10月22日	B	40代	理工系	任期雇用	Université de Rennes	フランス
2020年10月22日	C	30代	理工系	任期雇用	Indiana University	中国
2020年10月22日	D	60代	人文社会系	無期雇用	Chulalongkorn University	タイ
2020年10月23日	E	30代	理工系	任期雇用	National Defense Medical Center	台湾
2020年10月23日	F	40代	理工系	任期雇用	新潟大学	イエメン
2020年10月23日	G	40代	理工系	任期雇用	東京大学	マレーシア
2020年10月29日	H	30代	理工系	任期雇用	Charles University	チェコ
2020年10月29日	I	30代	理工系	任期雇用	University of Bermingham	イギリス
2020年10月30日	J	30代	理工系	任期雇用	Indian Institute of Technology, Roorkee	インド
2020年11月17日	K	40代	理工系	任期雇用	Peking University	中国
2020年11月17日	L	30代	理工系	任期雇用	None	中国
2021年6月25日	M	30代	人文社会系	任期雇用	École Pratique des Hautes Études	フランス
2021年6月29日	N	30代	理工系	任期雇用	Nanjing University	中国
2021年7月8日	O	40代	理工系	任期雇用	山形大学	中国
2021年7月25日	P	50代	人文社会系	無期雇用	名古屋大学	中国
2021年7月25日	Q	60代	人文社会系	無期雇用	名古屋大学	ラオス
2021年7月30日	R	50代	人文社会系	無期雇用	神戸大学	インド

表2 インタビュー調査項目

プロフィール	出身地
	国籍・地域
	性別
	妻（パートナー）国籍・地域
	子供の数
	子供の年齢
	母国語
	所属・肩書
	現在の所属先での雇用年数
	現在の所属先での保育所の有無
	学士・修士・博士取得年度および大学
	専門分野
教育・研究背景	日本以外での教育もしくは研究経験
	日本語の言語能力
	現在の所属先での使用言語
	研究で使用している言語
モチベーションと仕事の役割	現在の所属先で勤務しようと考えた理由は何ですか？
	日本で仕事をする上でメリット、デメリットは何ですか？
	日本国籍取得を考えたことがありますか？
	どのような仕事に関わっていますか？
	仕事を進める上で優先事項はありますか？
	現在の所属先でどのような役割を期待されていますか？
	日本社会、現在の所属先に外国人研究者としてどのように貢献していますか？
	昇進、収入や、仕事量など日本人研究者との違いはありますか？
	日本で外国人研究者が働く上で理想的環境はいかなるものですか？
課題と展望	これまで日本人同僚と仕事上でトラブルになったことがありますか？
	日本で仕事や生活をする中、困難に直面していることはありますか？
	日本で仕事や生活をする上で、COVID-19の影響はありますか？
	現在の所属先への満足度はどの程度ですか？
	日本から離れ、第三国・地域で仕事を探そうとしたことはありますか？
	現在の所属先は外国人研究者を上手に活用していますか？
	現在の所属先で外国人研究者を雇用するに当たり要望はありますか？

分析結果と考察

(1) 日本の公的研究機関

表 3 研究機関別にみた日本の研究者数（外国人研究者含む）

研究機関	機関数	研究者数	研究者数/機関数
企業	13,868	507,473	37
非営利団体	423	8,307	20
公的機関	502	30,532	61
（内、国営）	25	2,332	93
（内、公営）	389	9,255	24
（内、特殊法人・行政法人）	88	18,945	215
（内、研究開発法人）	33	15,492	469
（内、国立研究開発法人）	27	15,213	563
大学など	3,761	334,642	89
（内、国立）	1,059	148,399	140
（内、公立）	255	25,800	101
（内、私立）	2,447	160,443	66
総数	18,554	880,954	47

〔出典：総務省統計局（2020）科学技術研究調査から作成〕

表 3 は、研究機関別にみた日本の研究者数（外国人研究者含む）を示したものである。表 3 からわかるように、日本の研究者 [1] の過半数は企業、次いで大学に属している。今回の研究で対象とする公的研究機関は、日本には 27 の研究機関があり、全体の 2%弱の研究者数を占めるに留まっているが、機関当たりの研究者数の平均人数（研究者数/機関数）をみると、研究機関の中で最も多いことがわかる。公的研究機関の世界ランキング（2019）[2] に基づけば、日本の公的研究機関として 6 位に理化学研究所、7 位に産業技術総合研究所および、14 位に国立研究開発法人物質・材料研究機構がランクインしていることからわかるように、世界において日本の公的研究機関の研究力は比較的高い位置づけを占めている。これらの日本を代表する公的研究機関の中で、今回インタビューした一つの研究機関である理化学研究所には、2,973 名の研究者（外国人研究者含む）が在籍し、この内、584 名がテニュア資格を得た無期雇用研究者で、残りの 2,389 名が任期雇用研究者であり、多くの研究者は任期雇用研究者であることがわかる。そして外国人研究者は、822 名に達し、371 名がテニュア資格を得た無期雇用研究者で、451 名が任期雇用研

究者となっている。これら外国人研究者の出身国・地域をみてみると、アジア 495 名、ヨーロッパ 218 名、北米 58 名、中東 21 名、

表 4 日本で仕事をする上でのメリットとデメリット

		メリット	デメリット
対象者A	研究費や実験設備が充実していることがメリット。研究室の同僚との研究に関するコミュニケーションが減ったため研究の進捗に影響していることがデメリット。	研究環境	コミュニケーション
対象者B	○○（現職機関名）には豊富な実験設備があることがメリット。プロジェクトを進める上で手続き上の時間がかかることがデメリット。	研究環境	研究手続き
対象者C	中国と近く、食文化も似ており、充実した実験設備があることがメリット。言語の問題、国際的環境の欠如、収入が少ないことがデメリット。	研究環境、食生活、地理的距離	国際的環境、収入
対象者D	日本には充実した実験設備があり、他国と豊富な人的ネットワークがあることがメリット。母国から少し遠くて孤独感に陥ることがデメリット。	研究環境、人的ネットワーク	地理的距離
対象者E	○○（現職機関名）の実験設備が充実しており、○○（現職機関名）からの外国人研究者への支援が手厚いことがメリット。○○（現職機関名）のスタッフが日本語で話していることがデメリット。	研究環境、外国人研究者支援	言語
対象者F	育児保険が充実しており、収入が高いことがメリット。	保険、収入	ー
対象者G	豊富な実験設備があり、治安が良くて、国際的環境が充実していることがメリット。日本語を学習する機会が不足していることがデメリット。	研究環境、治安、国際的環境	言語
対象者H	豊富な実験設備があり、受け入れ教員が優れており、研究資金が潤沢にあることがメリット。時々、スタッフが英語を話すことができないことがデメリット。	研究環境、受け入れ教員、研究資金	言語
対象者I	イギリスと比較してポストドクターのポジションが日本で得られやすく、研究に集中できることがメリット。日本語が話せないのでコミュニケーションをとることができないのがデメリット。	ポスドクポジション	言語
対象者J	実験設備が充実しており、外国人研究者との人的ネットワークを構築しやすいことがメリット。言語の問題がデメリット。	研究環境、人的ネットワーク	言語
対象者K	充実した実験設備があることと、日本で妻と出会い、日本での生活に満足していることがメリット。母国から少し遠いことと、考え方に違いがあることがデメリット。	研究環境、家庭状況	地理的距離、思考方法
対象者L	ー	ー	ー
対象者M	人脈、資料が日本にあることがメリット。学生への教育機会が少ないことが	人的ネットワーク、研究資料	教育機会なし
対象者N	独立性があること。私は独立した研究者となりたいので、その点から言えば前職と比べてより良い環境となっている。安定性があること。安定した勤務環境にあり、業績評価システムが明確であることがメリット。言語の問題がある。時々、孤独感を感じる。文化の問題がある。日本の生活仕事環境に適応するのに時間がかかることがデメリット。	独立性、安定性	言語、文化
対象者O	ほかのところで働いたことがないので比較不可。	ー	ー
対象者P	自由な職場で、論文は2本プラスαが年間義務。教育負担はなし。研究テーマはボトムアップ方式で決定できる。○○（現職機関名）は研究費（研究会活動費用＋出張費＋学術本＋データーベース ※年間約100万円程度）が潤沢なのでこれもメリット。科研費も多い時、半分くらいの申請者が取得している。またいろいろな地域について研究している方がいるので、ほかの視点から比較しながら取り組むことができる。日本の独特の地域研究の手法は日本で通用しても、海外では通用しないことがデメリット。	研究環境、教育機会なし	分析手法
対象者Q	自由な研究環境で研究できること、雇用環境が安定していることがメリット。研究フィールドから地理的に遠いこと、円安で収入が減少したことがデメリット。	研究環境、安定性	研究フィールドと遠い、収入
対象者R	研究環境が整っているがメリット。明確な給与・昇進のシステムが不明、印鑑を自分で作成することがデメリット。	研究環境	不明慮な給与・昇進システム

アフリカ 15 名、オセアニア 15 名および、中南米 13 名である [3)]。また今回インタビューした今一つの日本を代表する公的研究機関である国立研究開発法人物質・材料研究機構には、780 名の研究者（外国人研究者含む）が在籍しており、この内、383 名がテニュア資格を得た無期雇用研究者で、残りの 397 名が任期雇用研究者である。先にみた理化学研究所と比べて在籍研究者人数は少ないが、それは物質・材料研究機構が、物質・材料エネルギー系に特化した研究機関だから

である。そして外国人研究者は、255 名となっており、この内、45 名がテニュア資格を得た無期雇用研究者で、210 名が任期雇用研究者となっている[4]。

(2) 日本で仕事をする上でのメリットとデメリット

表 4 は、日本で仕事をする上でのメリットとデメリットにかかわるインタビューを示したものである。表 4 から、多くの外国人研究者はメリットとして「優れた研究環境」をあげていることがわかる。またその研究環境として研究費、実験設備が充実していることや、学問の研究自由性があることに加え、受け入れ教員の研究業績が優れているといったことに言及している。今回インタビューした大半の外国人研究者は、理学・工学系といった自然科学分野の専門であるが、文部科学省による「文部科学統計要覧」[5]に基づけば、自然科学分野におけるノーベル賞受賞者数は、アメリカ、イギリス、ドイツ、フランス、そして日本の順で多くなっている。このことは世界的にみて日本の自然科学分野における研究が優れていることを示すものである。また科学技術・学術政策研究所による「各国の研究開発費の動向」[6]によれば、アメリカ、中国、そして日本となっている。研究開発費とは、企業、大学や、今回インタビューした公的研究機関で研究開発業務を行う際に使用した経費を示しており、このことから世界的にみて日本は研究費も潤沢であることがわかる。また表 2 から、外国人研究者は今一つのメリットとして「人的ネットワーク」もあげていることがわかる。このことに言及した外国人研究者の所属する研究室では、国内外の大学や他研究機関との共同研究を通じて、人的ネットワークの構築に取り組みやすい環境が充実しているものと考えられる。その一方で、表 4 からわかるように多くの外国人研究者はデメリットとして、日本が非英語圏であることに伴った「言語」といった日本特有の問題をあげていることがわかる。今回インタビューした大半の外国人研究者は、研究で使用する言語は英語であることから問題ないが、生活では日本語が求められる。「EF EPI 英語能力指数」[7] に基づけば、英語を第 2 言語とする国・地域（112 か国・地域）において日本は 78 位となっており、世界的にみて英語能力が「低い国・地域」という極めて不名誉なカテゴリーに分類されている。このようなことを踏まえれば、外国人研究者が特に言語の壁に不自由を感じているというのも頷ける結果である。また表 4 から、外国人研究者の今一つのデメリットとして「地理的距離」もあげていることがわかる。今回インタビューを実施した 2020 年 10 月～2021 年 7 月は、全世界的にコロナが流行し、入国規制が行われている最中ということもあり、母国との往来が難しいため、より母国からの地理的距離を実感しやすかったものと考えられる。

(3) 現在の所属先で勤務している理由

表 5 は、現在の所属先で勤務している理由にかかわるインタビューを示している。表 5 より、多くの外国人研究者は「優れた研究機関」「専門分野とのマッチング」「入職前共同研究」をあげていることがわかる。「優れた研究機関」であるということは先にみたように日本で仕事をする上でのメリットとなると同時に、現在の所属先で勤務する理由ともなっている。「専門分野とのマッチング」に関しては、これら外国人研究者が単に研究機関に就職できれ

表 5 現在の所属先で勤務している理由

対象者A	研究成果を創出したいため。また研究機関の待遇は母国と比べても良いため。	研究成果、待遇
対象者B	6年前にフランスの友人に日本に誘われて興味を持つようになり、〇〇（現職機関名）と共同研究を開始したことがきっかけ。研究室の先生と共同研究していた〇〇（現職機関名）の先生が非常に仲が良くて、その紹介で〇〇で勤めることになった。	入職前共同研究
対象者C	〇〇（現職機関名）は日本で優れた研究機関の一つで、同等の組織にアメリカで働くことが難しかったため。	研究機関
対象者D	日本の研究環境が好きで、日本の研究機関は母国と比較して優れているため。渡日前に当時所属していた研究室と〇〇（現職機関名）とで共同研究を行っていたため。当時所属していた研究室の先生の紹介を通じて、〇〇で勤めることになった。	研究機関、入職前共同研究
対象者E	日本は台湾から近くて、受け入れ教員が当該分野で優れた研究者の一人であったため。	受け入れ教員
対象者F	△△（博士号取得大学）大学で博士号を取得し、△△と〇〇（現職機関名）との間で共同研究を行っていたため。先生同士の仲が良好で、その紹介で〇〇で勤めることになった。	入職前共同研究
対象者G	ホームページで受け入れ教員を探して決定した。	受け入れ教員
対象者H	ドイツで受け入れ教員を探したが、良い結果が得られなかったため、現在の所属先で勤務しようと考えたため。	妥協
対象者I	JSPSの外国人研究者から受け入れ教員の紹介を受けたため。	人的ネットワーク
対象者J	博士号取得後、イギリスで働きたかったが良い結果を得ることができなかったため、現在の所属先で勤務している。	妥協
対象者K	〇〇（現職機関名）は日本で優れた研究機関であり、〇〇（現職機関名）で奨学金を得ることができたため。	研究機関
対象者L	渡日前に所属していた研究室で〇〇（現職機関名）と共同研究をしていたため。研究室の先生の紹介で〇〇で勤めることになった。	入職前共同研究
対象者M	仕事を探している過程で、現在の職場に応募した。日本文学、日本仏教という専門分野上、日本で研究活動を行うことにした。	専門分野マッチング
対象者N	仕事環境が充実しており、日本における研究施設が優れているため。	研究機関
対象者O	専門分野とマッチしている。企業にも応募したが、ここで採用通知をもらったのでここに入職した。	専門分野マッチング
対象者P	日本を代表する地域研究の研究所であるし、主にフィールドワーク（浙江省→深センなど）を通じて中小企業研究に携わっており、研究スタイルが一致しているので、現在の職場に勤務しようと考えた。現在の職場は研究者にとっては働きやすいので良い研究環境が整っている。	研究機関
対象者Q	発展途上国（メコン地域：タイ、ベトナム、カンボジア、ミャンマー）に関心があり、日本でこの領域に関する研究ができるところということで、現在の職場に応募した。	専門分野マッチング
対象者R	日本語研究の最高峰であるため。	研究機関

ばよいというわけではなくて、専門分野の研究を追求することができる研究機関を選んで就職している様子がうかがわれる。さらに「入職前共同研究」については、入職前から現在の所属先と

のネットワークが存在しており、それをツテに就職しているということを示唆している。入職希望者が仕事を見つけるジョブ・マッチングの過程について研究したGranovetter（1974）は、「入職希望者は強い紐帯（頻繁に会っている者）よりはむしろ弱い紐帯（稀にしか会わない者）によって望ましい仕事が得られる」としてアメリカではそれが支持される結果が得られたが、日本でこのことを検証した渡辺（1991）によれば、むしろ強い紐帯によって望ましい仕事が得られることが明らかにされている。すなわち日本で入職希望者は仕事を見つける際に、今回のケースで言えば入職前の研究室の強い紐帯を使って自分と共通の交際範囲・社会圏に属する現在の所属先の人々に接近し、仕事を得ることにつながっていると考えられる。したがって、日本における外国人研究者の入職に当たっては、強い紐帯は同じ社会圏に属している人々の間の頻繁な直接的な関係によって社会圏内の凝縮性を高める機能を持っていると言える。このことの背景には、Dore（1976）が言及しているように「欧米諸国では仲介者は推薦状を書く人や、法的な書類の署名の立会人としてのみ考えられるが、日本では『個人の保証人』としての機能が重要視されている」という日本特有の慣行が存在していることがある。つまり日本では一般的に人を紹介することは、その人の名前を単に伝えるだけではなく、その人の信頼できる行動を保証することも意味しているということである。今回のような言葉の壁がある外国人研究者のケースでは、日本人研究者と比べて、むしろ研究室（研究室を主宰している先生）が強い紐帯としてより一層機能しているということも十二分に考えられる。そうであるならば、日本の研究機関に入職希望する外国人研究者は、入職に当たって、どこの研究室に所属して研究に取り組んでいたかということが重要な要素として作用しているということである。その一方で、このことは優秀な外国人研究者でありながらも、そのような強い紐帯となる研究室、すなわち研究室を主宰している先生の存在がなければ、入職が難しいという可能性があることも示唆している。そしてその結果として、そのような優秀な人材が海外の研究機関に流出しているとするならば、それは日本の公的研究機関だけに留まらず、社会全体にとって損失となっていると言える。

(4) 外国人研究者としての役割と期待

表6は、外国人研究者としてどのような役割が期待されているのかにかかわるインタビューを示している。表6からわかるように、ほぼすべての外国人研究者は「研究」をあげていることがわかる。今回インタビューした理工系専門の外国人研究者は、研究室を主宰している研究者ではなく、その研究室の主宰者の下で任期付きの若手研究者として研究に従事している者が大半である。したがって、現在の所属機関において管理・運営業務はなく、教育を行う必要もないため、研究室や自身の研究課題のみに没頭して研究に取り組める環境が整っている。これに対して今回インタビューした外国人研究者の中で、DとQはシニア研究者（60代）であるため、「人的ネットワーク形成」や「民間企業・政府への情報提供」という形式で、現在の所属機関への貢献も期待されていることがわかる。このような公的研究機関における外国人研究者の役割と期待することについては大学でもほぼ同様である。

表 6 外国人研究者としての役割と期待

対象者A	研究成果を出すこと。日本人研究者と比べて外国人研究者に対してSSCI論文を出してほしいという期待があり、少しストレスを感じている。	研究
対象者B	独立した研究者として学術界に研究成果を発表すること。	研究
対象者C	理研において研究に取り組むことが期待されている。指導学生はいないし、教育もないし、それは日本人と外国人研究者に違いはない。	研究
対象者D	タイの大学との人的ネットワークを構築することが期待されている。タイの研究者が〇〇（現職機関名）訪問時に対応し、どのような共同研究が可能な話し合っている。	人的ネットワーク形成
対象者E	研究に取り組むことが期待されている。	研究
対象者F	ー	ー
対象者G	新たな研究アイディアを創出して研究に取り組むことが期待されている。	研究
対象者H	新たな研究アイディアを創出して研究に取り組むことが期待されている。受け入れ教員と研究について話し合うことも期待されている。	研究
対象者I	9か月ごとにどのくらい論文を書いたか報告する必要があり、研究に取り組むことが期待されている。	研究
対象者J	研究に取り組むことが期待されている。	研究
対象者K	研究を引っ張っていくリーダーになることが期待されている。	研究
対象者L	ー	ー
対象者M	国際共同研究（フランスと日本）、シンポジウムの開催。日本人と同様の仕事内容。違いは感じていない。	研究
対象者N	著名な研究者となること。	研究
対象者O	研究という視点からインドネシアとミャンマーの貧困国に貢献している。個人の観点からは考えたことなし。	研究
対象者P	著名な研究者となること（良いジャーナル、学会賞取得、企業・政府との交流を積極的にする）	研究
対象者Q	研究業績を出すことが求められる。民間企業・政府・報道機関からの問い合わせへの対応（業績としてカウント）。委員会に入ってより良い研究環境を作ることが期待されている。	研究、民間企業・政府への情報提供
対象者R	新規性のある研究を実施することが期待されている。	研究

大学における外国人研究者の役割と期待について研究した李（2020）によれば、外国人研究者を類型化した上で、外国語専門の外国人研究者に対しては日本語能力が求められず、大学へのコミットメントも余り期待されていない一方で、今回インタビューした人文社会系専門の外国人研究者については日本語能力が高く要求され、日本人研究者と同様に大学へコミットメントすることが求められている。また理工系専門の外国人研究者に関しては、その専門の性質上、日本人外国人問わずに英語がある程度通用するため、大学へのコミットメントはその中間に当たるとされている。今回インタビューした公的研究機関の理工系専門の外国人研究者とで違うことと言えば、ノンテニュアトラックの若手研究者で、将来的に他機関に異動することを前提にしたキャリア形態であることに加え、研究機関であることから教育を行うことを通じてのコミットメントが期待されていないことである。

(5) 日本で外国人研究者が働く理想的環境

表 7 日本で外国人研究者が働く理想的環境

対象者A	日本人研究者と外国人研究者との研究交流がもっと必要であると考える。毎週、ミィーティングがあるが積極的な参加がない。	コミュニケーション
対象者B	○○（現職機関名）は外国人研究者が働く上で理想的環境を提供している。日本での生活や、言語面でのサポートを充実させることが重要。	言語、生活
対象者C	事務スタッフが外国人研究者のために転居手続きを行うなどミニマムな支援が不可欠。日本での生活をより充実させるためにも日本語の授業を開講するなども有効。	事務的支援、言語
対象者D	日本語文章だけではなくて英語文章をもう少し増やしてもらえると外国人研究者は助かる。また日常生活においてもさらに外国人研究者へのサポートが必要。	事務的支援
対象者E	○○（現職機関名）は理想的環境が整っている。日本語は漢字が読めるので問題はない。	―
対象者F	子供がいるのでインターナショナルスクールを近くにもっと増やしてほしい。	国の行政的支援
対象者G	○○（現職機関名）で日本語の授業の開講や、転居手続きなど、外国人研究者にさらなるサポートが必要。	事務的支援、言語
対象者H	収入と研究資金が潤沢であり、外国人研究者に必要なさらなるサポートは必要ない。	―
対象者I	研究環境が非常に良いため、現在ここでテニュアのポジションに応募している。母国には戻りたくはないと考えている。	―
対象者J	大半の研究者が男性であり、女性が少ないので、この点を改善する必要有。	ジェンダーバランス
対象者K	○○（現職機関名）は理想的環境が整っている。問題なのは大学で、学内で英語が使用されていない、学内の文章は日本語と英語表記がされていない。外国人研究者で日本語が話せない者にとってコミュニケーションをとることが難しい。	事務的支援、言語
対象者L	研究環境は充実していて問題はない。問題があるのは言語で、この点に関して改善が必要。	言語
対象者M	外国人研究者として特別扱いされていない。それが楽。だから日本語がある程度わかる先生でないと難しいという側面がある。○○（現職機関名）は日本が研究対象なので、日本語は必須である。その一方で、国文研で多言語化による発信をどのようにするかということが課題となっている（論文は日本語で書かれているため、それをどのように多言語で発信するかということ）。	多言語発信
対象者N	現在の職場に満足している。さらに特別な環境は必要なし。もし可能であれば日本語を学習する機会を提供してほしい。	言語
対象者O	それ以外の職場経験がないので比較不可能。	―
対象者P	現在の職場に満足。	―
対象者Q	日本にいることが前提となっていることが変わる必要有（転出届を外国籍だとできない。初めから申請することになる）。	国の行政的支援
対象者R	管理運営に関する会議が多すぎること。管理運営は学者がやるものではないので改善する必要性がある。学者は研究すべき。 次世代の研究をダメにしている。	会議を少なくする

表 7 は、日本で外国人研究者が働く理想的環境がどのようなものかにかかわるインタビューを

示している。表 7 からわかるように、大半の外国人研究者は原則として、現在の所属機関に対して満足しているようである。だが「言語」の問題や、「事務的支援」の不足といったことが課題としてあげられていることもわかる。このうち「言語」の問題に関しては、日本で仕事をする上でのデメリットの一つとしても先に言及されてきたことである。外国人研究者 D や N のインタビューにあるように「日本での生活を充実させるためにも日本語の授業の開講」ということもそれぞれの研究機関においてより一層充実した研究環境とするために重要である。特に非漢字圏の国籍・地域を持った者に対して、日本語の学習機会を提供していくことが大切である。もし研究機関単独でそれが難しい場合、研究機関は当該市町村と協力して、市区町村が主宰している日本語教室について外国人研究者およびその家族に紹介し、日本語の学習を促すことも方法の一つである。また「事務支援」については、主として入退去の手続き、市役所での各種行政手続きや、現在の所属機関での手続きの際に、外国人研究者は助けを必要としている様子である。日本では賃貸マンションなどの入居契約時、その契約書は通常日本語で記載されていることに加え、契約に当たっては連帯保証人を必要とするケースが多く、その連帯保証人は日本人でなければいけないという特有の慣行が存在しているが、外国人研究者がそのような人物を探すのは難しい。また外国籍定住者が多い市町村では各種行政手続き書類が複数言語で記載されていることもあるが、市町村によってはそうでないところもあるため、そのような場合では外国人研究者は手続きが困難である。さらに現在の所属機関での手続き書類は通常、外国人研究者のために英語で記載されているが、不十分に感じているようである。このような事務的支援が必要であると指摘しているのはいずれも理工系専門で日本語が話せない外国人研究者であることから、研究機関は賃貸業者や、市町村などの行政と問題共有を行うことを通じて、特にそれらの外国人研究者に優先的に支援を行っていくことが不可欠である。さらに少数の外国人研究者からは、「ジェンダーバランス」といった女性研究者の少なさが問題として指摘されている。内閣府男女共同参画局（2017）の理工系専門の諸外国の研究者に占める女性の割合に関するデータ [8] によれば、スペイン（39.6%）、ノルウェー（37.4%）や、イギリス（37.4%）は比較的多くなっているが、日本は僅か 15.3%に過ぎず、諸外国と比べ、日本の理工系専門では女性研究者の進出が遅れていることがわかる。日本の自然科学分野の研究所では、女性研究者にも働きやすい環境づくりを心掛ける必要がある。

まとめと今後の課題

本研究では、日本の公的研究機関における外国人研究者の来日動機、現在の所属先で勤務している動機、役割・貢献および、直面している課題について検証を行った。分析結果から、一つ目に我々が考えている以上に、日本の公的研究機関の研究環境は優れており、それに魅力を感じて来日している外国人研究者が多いということがわかった。二つ目は、入職前の研究室での共同研究を通じて、現在の所属先とのネットワークがすでに構築されており、それを媒介として入職し

ているといった現状が存在していることが明らかとなった。すなわち、日本の公的研究機関への外国人研究者の入職に当たっては、研究室という強い紐帯によるツテが有用に作用しており、それは仲介人が個人の保証人としての機能が重要視されている日本特有の慣行に基づいたものであると考えられる。三つ目は、日本の公的研究機関に所属する多くの外国人研究者は任期雇用研究者で、今回インタビューした外国人研究者もそのような方々であったことから、管理・運営業務や教育といった役割はそもそも期待されておらず、研究のみに専念して優れた研究成果の創出に寄与することが期待されていることがわかった。そして四つ目に、大半の外国人研究者は、日本が非英語圏であることに伴う言語の問題や、行政手続き上の事務的支援を課題としてあげていることが明らかとなった。

本研究を通じて解明された点の中で、特に重要なこととしては、日本の公的研究機関への外国人研究者の入職プロセスにおいて研究室、すなわちその研究室の主宰者である教員が媒介人となり、入職しているといった日本特有の慣行が存在していることである。欧米諸国において仲介人は推薦状や立会人といった形式に留まることが多いが、日本において仲介人となるということはその人物の素行まで保証することを意味する。したがって、この人物の素行によっては、今後のその公的研究機関との信頼関係が失われることもあり得るので、仲介人は慎重に人選を行うのが通常である。だがこのことはその一方で、そのような強い紐帯となる仲介人を持たない外国人研究者にとって、日本の公的研究機関への入職は難しくなるということも示唆している。その結果として、優秀な外国人研究者でありながら、そのような存在が不在であるため、他国・地域における公的研究機関への流出につながっているとしたならば、高度人材獲得の観点から早急に改善していかなければいけないことである。

今後の課題についてであるが、本研究では先に言及したように日本の公的研究機関における外国人研究者は任期雇用研究者のほうが、テニュア資格を得た無期雇用研究者よりも多いという現状もあり、このことを反映して今回インタビューした外国人研究者の大半も任期雇用研究者である。しかし特に外国人研究者としてどのような役割が期待されているかということについては、原則として任期終了後は他機関への異動が前提となる任期雇用研究者とは異なり、テニュア資格を得た無期雇用研究者は、研究室主宰者として管理・運営業務にも取り組んでいくことが期待されている可能性がある。今一つの課題としては、日本の公的研究機関については理工系が大半を占めていることもあり、今回インタビューした外国人研究者の多くも理工系の専門である。だが李（2020）の大学における外国人研究者の役割と期待に関する研究に基づいて言えば、日本の人文社会系の公的研究機関でも外国人研究者に対して高い日本語能力が要求される可能性が考えられ、理工系の公的研究機関とは異なった役割と期待が存在することも想定される。今後の研究においては、テニュア資格を得た無期雇用研究者や、人文社会系の公的研究機関の外国人研究者に対してもさらにインタビューを行い、そのような外国人研究者の雇用形態や専門分野の違いに伴った役割期待の異なる点についても検証することを通じて、より精度の高い研究成果を得られることが予期される。この点については今後の研究を待ちたい。

注

1) 研究者とは、大学（短期大学を除く）の過程を修了した者、またはこれと同等以上の専門的知識を有する者で、特定のテーマをもって研究を行っているものを指す。

2) The World's Most Innovative Research Institutions 2019 (https://www.nims.go.jp/publicity/publication/hdfqf1000009ctbb-att/NIMS-PF_JP_RP04_20200501.pdf)（参照日：2021 年 12 月 16 日）.

3) Institute of Physical and Chemical Research (https://www.riken.jp/about/data/index.html)（参照日：2021 年 12 月 16 日）.

4) National Institute for Materials Science (https://www.nims.go.jp/publicity/publication/hdfqf1000009ctbb-att/NIMS-PF_JP_RP04_20200501.pdf)（参照日：2021 年 12 月 16 日）.

5) Ministry of Education, Culture, Sports, Science and Technology (https://www.kantei.go.jp/jp/singi/kyouikusaisei/dai18/t3.pdf)（参照日：2021 年 12 月 16 日）.

6) National Institute of Science and Technology Policy (https://www.nistep.go.jp/sti_indicator/2019/RM283_11.html)（参照日：2021 年 12 月 16 日）.

7) EF English Proficiency Index (https://www.efjapan.co.jp/epi/)（参照日：2021 年 12 月 16 日）.

8) Gender Equality Bureau Cabinet Office (2017) (https://www.gender.go.jp/public/kyodosankaku/2017/201708/201708_05.html)（参照日：2021 年 12 月 16 日）.

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14.　日本の理工系研究所における外国人研究者の雇用目的・方法と活用

The objectives and methods of recruiting international researchers, and utilization of them in Japan's research institutes of science and technology

白川展之（新潟大学）

はじめに：日本における公的研究機関

（1）日本における公的研究機関

日本おける公的研究機関とは、国及び地方公共団体が設置する国営・公営の試験研究機関のことをいう。これら機関の設置形態には、いくつかの類型に分かれる。

国又は地方公共団体が運営する直営の試験研究機関、国の機関で、個別立法による特殊法人又は独立行政法人通則法（平成十一年法律第百三号）に定める独立行政法人として、設置されている機関、地方公共団体の機関で地方独立行政法人法（平成十五年法律第百十八号）に定める地方独立行政法人としての法人格をもつ機関がある。国の独立行政法人のうち、主に研究開発、試験研究を行う機関であって、個別法で定められた機関は、国立研究開発法人である。2021（令和 3）年度現在で国立研究開発法人は 27 法人ある。

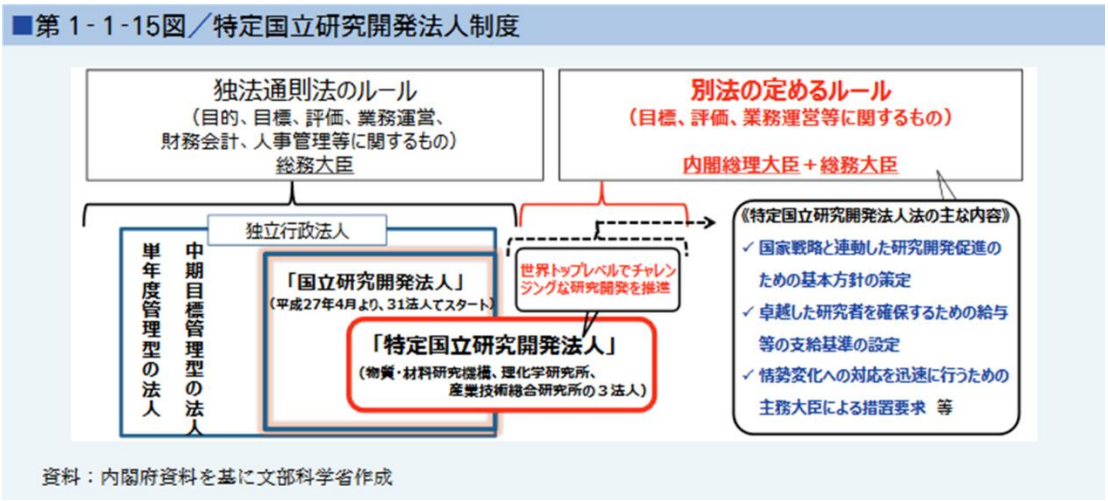
特定国立研究開発法人による研究開発等の促進に関する特別措置法（平成 28 年法律第 43 号）に基づいて指定された 3 法人が、特定国立研究開発法人である。この特定研究開発法人とは、研究開発等の特性への配慮し、独立行政法人通則法の特例等を認めることにより、国際競争力の強化のために、総合科学技術・イノベーション会議による関与の強化を強めることを意図したもので、令和 3 年度現在、文部科学省所管の物質・材料研究機構（NIMS）、理化学研究所（RIKEN）の 2 法人及び経済産業省所管の産業技術総合研究所（AIST）の合計 3 法人が指定されている。

（2）日本の研究者研究主体別の研究機関及び研究者数

総務省の科学技術研究調査（2020（令和 2）年版）によると、日本の研究者の過半数以上は企

業、次いで大学に属している。また、日本の研究機関のうち公的機関では、機関数としては、地方公共団体が設置する公営の機関数が最も多い。

図１　特定国立研究開発法人制度



出典：平成 27 年度科学技術白書

表１　日本のセクター別研究者数

研究機関	A:機関数	B:研究者数	B/A
2　企　　業（1）	13,868	507,473	37
3　非　営　利　団　体（2）	423	8,307	20
4　公　的　機　関（3）	502	30,532	61
5　国　　営（4）	25	2,332	93
6　公　　営（5）	389	9,255	24
7　特殊法人･独立行政法人　（6）	88	18,945	215
8　うち研究開発法人　（7）	33	15,493	469
9　うち国立研究開発法人（8）	27	15,213	563
10　大　　学　　等（9）	3,761	334,642	89
11　国　　立（10）	1,059	148,399	140
12　公　　立（11）	255	25,800	101
13　私　　立（12）	2,447	160,443	66
1　総　　数	18554	880954	47

出典　総務省統計局　2020（令和 2 年）科学技術研究調査　第 1 表より作成

一方、機関の規模でみると、公的機関である国立研究開発法人 27 法人には、全体の 2%弱の研究者数を占めるにとどまるが、機関当たりの研究者数の平均人数（b/a）をみると、機関種別の中でもっとも大きい。ただし、国立研究開発法人の中には、文部科学省所管の国立研究開発法人科学技術振興機構（JST）、経済産業省所管の新エネルギー・産業技術総合開発機構（NEDO）

のように、研究の直接的な推進よりも、資金提供・ファンディングを中心とした機関も含まれるが、研究機関としてみると、国立研究開発法人は、大規模な組織であることがうかがえる。

２　調査内容

（１）調査設計・実施概要

日本の理工系研究所における外国人研究者の雇用目的・方法と活用に関する情報を得て、日本にとっての政策的含意を考察するため、外国籍研究者の主要な雇用の責任を負っている日本人の研究管理者（PI）及びその元で働く・働いた外国籍の研究員に対して、共通の質問項目で半構造化インタビューを実施した。

インタビューについては、新型コロナウイルスの感染状況を踏まえ 2020（令和 2 年）度下半期に、オンライン会議システムを用いて半構造化インタビューを実施した。

（２）分析対象機関及び組織の絞り込み

日本の理工系の公的研究機関の調査対象機関の選定に際しては、外国籍の職員が多く在籍しており、インタビュー対象が得られやすい国際性に優れる機関を対象として分析することとした。いずれもこのため公的機関の中でも規模が大きい国立研究開発法人のうち、特に国際的な研究が期待される特定研究開発法人で、文部科学省所管の物質・材料研究機構（NIMS）、理化学研究所（RIKEN）の 2 法人を調査対象に選んだ。

ちなみに、トムソンロイター（現クラリベイト）の世界の研究機関の 2019 年度のランキング「The World’s Most Innovative Research Institutions 2019」によれば、日本の公的研究機関は、トップ 25 機関のうち、4 機関がランキング入りしている。これらは、いずれも国立研究開発法人である。また、ファンディング機関として自らは研究を実施しない 4 位の科学技術振興機構（JST）を除くと、6 位の理化学研究所、7 位の産業技術総合研究所、15 位の物質・材料研究機構と、いずれも特定研究開発法人となっている。

A　特定国立研究開発法人理化学研究所の特徴

理化学研究所（RIKEN）は、物理学、工学、化学、数理・情報科学、計算科学、生物学、医科学などに及ぶ広い分野で研究を進める、日本で随一の自然科学の総合研究所で、全国各地に拠点がある。

同研究所は、1917 年（大正 6 年）に財団法人として創設され、第 2 次世界大戦後、株式会社科学研究所、特殊法人時代を経て、2003 年（平成 15 年）10 月に文部科学省所轄の独立行政法人理化学研究所として再発足し、2015 年（平成 27 年）4 月には国立研究開発法人理化学研究所になったものである。理化学研究所は、「特定国立研究開発法人による研究開発等の促進に関する特別措置法」に基づき、2016（平成 28）年 10 月 1 日付で特定国立研究開発法人に移行した。

図 2　The World’s Most Innovative Research Institutions 2019

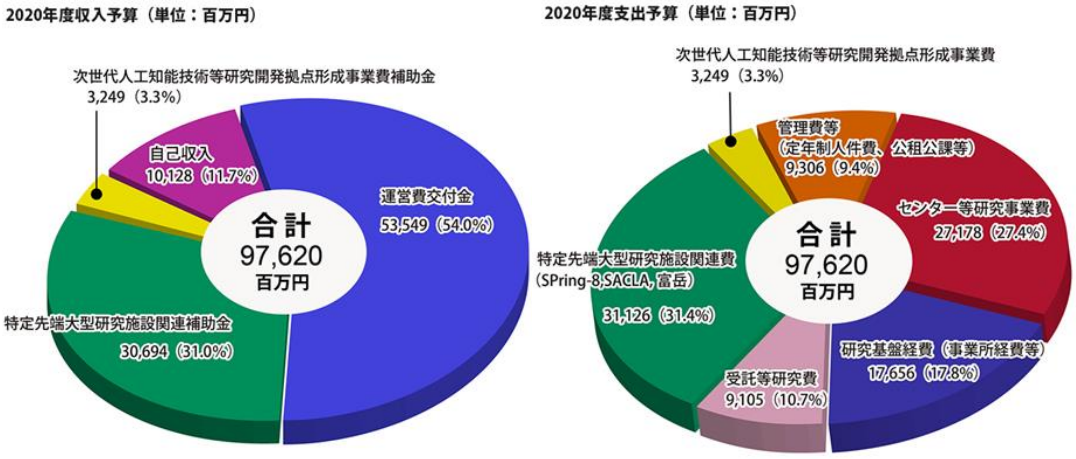
Thomson Reuters Ranking 2019

The World's Most Innovative Research Institutions 2019

順位	機関名	国
1	Health & Human Services Laboratories	USA
2	Fraunhofer Society	Germany
3	CEA	France
4	Japan Science & Technology Agency	Japan
5	Agency for Science Technology and Research	Singapore
6	RIKEN	Japan
7	National Institute of Advanced Industrial Science & Technology	Japan
8	National Center for Scientific Research	France
9	National Institute of Health & Medical Research	France
10	Chinese Academy of Sciences	China
11	Medical Research Council	UK
12	U.S. Department of Veteran Affairs	USA
13	Korea Institute of Science & Technology	South Korea
14	**National Institute of Materials Science**	**Japan**
15	Max Planck Society	Germany
16	German Cancer Research Center	Germany
17	Commonwealth Scientific & Industrial Research Organisation	Australia
18	Academia Sinica	Taiwan
19	National Research Council of Canada	Canada
20	German Research Center for Environmental Health Munich	Germany
21	Los Alamos National Laboratory	USA
22	Jülich Research Center	Germany
23	Spanish National Research Council	Spain
24	U.S. Navy	USA
25	National Institute for Research in Computer Science and Automation	France

出典　https://www.reuters.com/innovation/most-innovative-institutions-2019

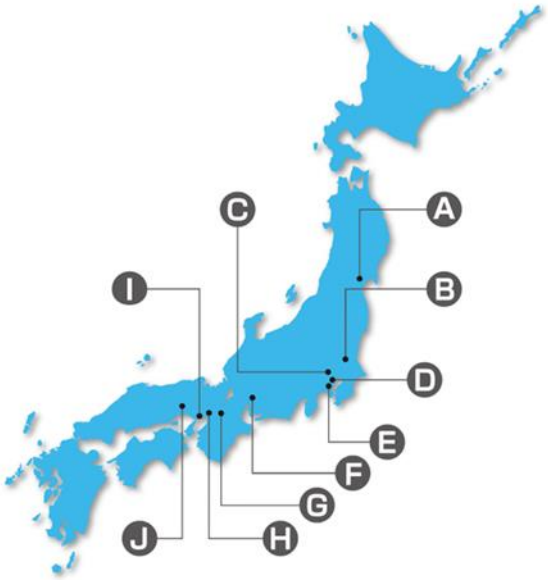
図 3　理化学研究所の歳入・歳出



出典：https://www.riken.jp/about/data/index.html

表 2　理化学研究所の国内拠点

内訳	人数 （各センターに所属する 基礎科学特別研究員を含む）
情報システム本部	28
科技ハブ産連本部	11
創薬・医療技術基盤プログラム	10
予防医療・診断技術開発プログラム	5
医科学イノベーションハブ推進プログラム	28
バトンゾーン研究推進プログラム	45
開拓研究本部	301
革新知能統合研究センター	200
数理創造プログラム	29
生命医科学研究センター	347
生命機能科学研究センター	531
脳神経科学研究センター	318
環境資源科学研究センター	288
創発物性科学研究センター	199
光量子工学研究センター	126
仁科加速器科学研究センター	145
計算科学研究センター	148
放射光科学研究センター	91
バイオリソース研究センター	123
事務等	529
合計	3,502

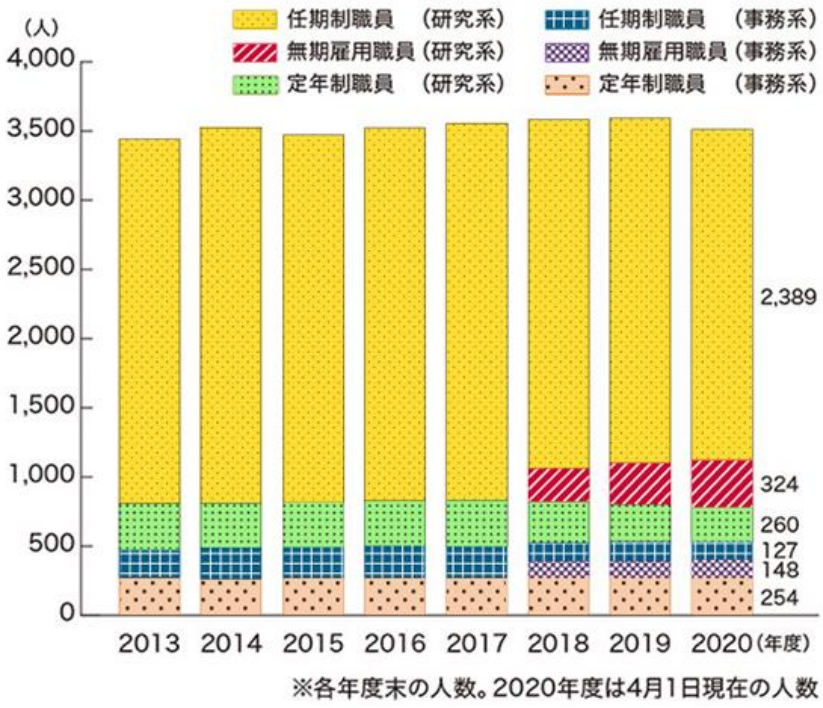


出典：https://www.riken.jp/about/data/index.html

図４　外国籍職員の出身地

出典：https://www.riken.jp/about/data/index.html

図５　雇用職員の状況



出典：https://www.riken.jp/about/data/index.html

理化学研究所（RIKEN）は、設立時からの伝統で人材流動性の流動性を国内で確保してきた。これに伴い、2020 年 4 月 1 日の常勤職員数は 3,502 人で、その 85％にあたる 2,973 人が研究系職員、さらに、その 85％にあたる 2,389 人が任期制職員であり、研究系常勤職員のうち長期雇用者（無期雇用職員・定年制職員）は 584 人である。

国際協力を研究推進の大きな柱とし、世界各国から研究者や技術者、学生を積極的に受け入れ外国籍のそれら研究系スタッフは、2019 年 10 月 1 日現在で 822 人に達し、そのうち、研究員（非常勤を含む）として 451 人が在籍となっている（同研究所ホームページ)。

B　特定研究開発法人　物質・材料研究機構（NIMS）の特徴

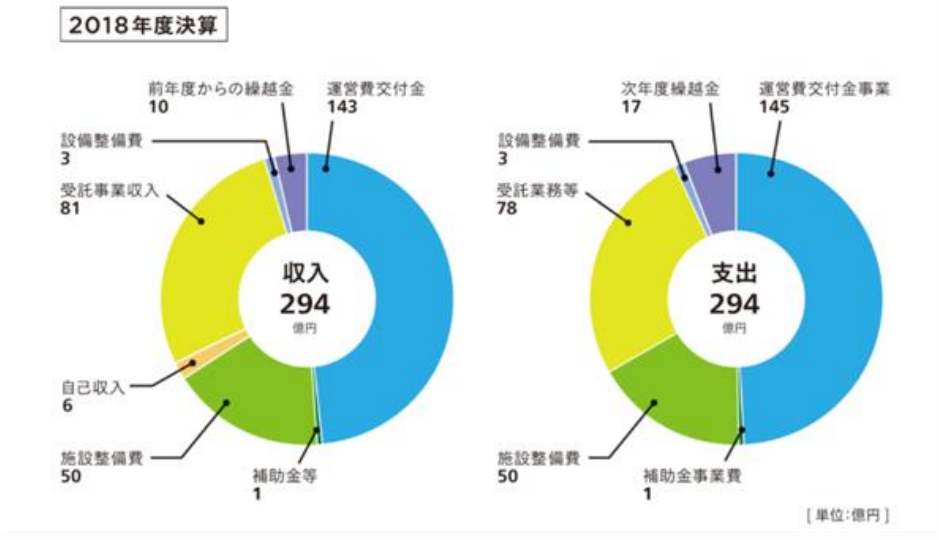
特定研究開発法人物質・材料研究機構（NIMS：National Institute for Materials Science）は、物質・材料科学技術に関する基礎研究および基盤的研究開発等の業務を総合的に行うことにより、物質・材料科学技術の水準の向上を図るために設立された公的研究機関である。2001 年 4 月に旧科学技術庁所管の 2 つの試験研究機関の国立研究所（金属材料研究所及無機材質研究所）が統合され独立行政法人として発足後、2015 年 4 月に国立研究開発法人に移行した。2016 年 (平成 28 年)10 月に「特定国立研究開発法人による研究開発等の促進に関する特別措置法」により、特定国立研究開発法人に移行した。

国立試験研究機関を母体としており、定年制職員と任期制職員の割合をみると、定年制職員が全体の三分の一とその割合が高く理化学研究所ほど任期制職員の割合が高くないことが特徴である。2020 年 4 月 1 日現在では外国人研究者は、全体の 17.7%を占める 278 人であり、定年制職員も 46 人在籍している。

こうした、多くの外国人研究者が定年制職員として定着している背景には、国の物質・材料科学研究の拠点としての整備が進められてきたことがある。特に国際的な研究活動に特化した部門には、国際ナノアーキテクトニクス研究拠点（MANA）がある。同拠点は、文部科学省が 2007 年に創設した「世界トップレベル研究拠点形成促進事業（WPI プログラム)」に基づいて選定された、全国 13 の研究拠点の一つである。世界中の優れた研究者が参加する最高の研究水準と魅力的な研究環境を併せ持つ、ナノテクノロジーと材料研究分野における代表的な国際研究拠点として、科学技術を飛躍的に促進することを目的に設立された。

MANA は、研究成果だけでなく、「国際化」や「若手研究者を育成する効果的なプログラムの確立」の面でも、日本で最も優れた研究機関の一つと高く評価されている。

図 6　物質材料研究機構の歳入歳出状況



出典　物質材料研究機構ホームページ

表 3　物質材料研究機構の人員構成

人員構成

		人数	外国人（内数）	女性（内数）
役員		6	0	2
定年制職員	研究職員	383	45	38
	エンジニア職員	67	1	14
	事務職員	103	0	33
	計	559	46	87
任期制職員等	研究職員	397	210	65
	エンジニア職員	344	21	233
	事務職員	264	1	191
	計	1005	232	489
役職員合計		1564	278	576
割合			17.7%	36.8%

[2020年4月1日現在]

出典　物質材料研究機構ホームページ

表 4　研究部門組織（2021 年 10 月現在）

■機能性材料研究拠点
　無かったモノ、作れなかったモノを創る、そして未来を育む
■エネルギー・環境材料研究拠点
　エネルギー・環境材料に関する世界トップ拠点を目指して
■磁性・スピントロニクス材料研究拠点
　省エネデバイスのための磁性・スピントロニクス材料の基盤
　研究
■構造材料研究拠点
　国土強靭化と産業競争力強化のための構造材料研究を産学官　融合で推進する拠点
■国際ナノアーキテクトニクス研究拠点（MANA）
　ナノテクノロジー・材料科学における世界トップレベルの研究機関を目指す
■先端材料解析研究拠点
　マテリアルイノベーションを加速する先端的なテクノロジー
■統合型材料開発・情報基盤部門
　データとの融合で物質・材料の研究開発を革新する
■技術開発・共用部門
　先端装置と専門家集団による研究開発の推進
■元素戦略磁性材料研究拠点
　希少元素によらない新規高性能永久磁石材料を研究開発する世界的な拠点
出典：物質材料研究機構ホームページより筆者作成

（3）インタビュー対象者

文部科学省所管の特定研究開発法人 2 法人から合計 5 名の主任研究者 PI（Principal Investigator）を対象としたインタビューを 2021（令和 2）年 10 月~11 月にかけて実施した。

A　理化学研究所

研究分野・領域の特性の差をみる意味で、工学系、生物学系、物理学系のチームリーダー（PI）をインタビュー対象者の選定について、企画部門を通じて依頼・選定した。

表 5　インタビュー対象者一覧

研究機関	年齢	インタビュー実施日
A　理化学研究所 ①工学系チームリーダー ②生物学系チームリーダー ③物理学系チームリーダー（ドイツ公的研究機関及び中国の大学とのクロスアポイント）	 40 代 60 代 40 代	 2020 年 10 月 22 日 2020 年 10 月 22 日 2020 年 11 月 17 日
B　物質材料研究機構 ④MANA 主任研究者（兼任：東京大学教授） ⑤MANA 主任研究者（兼任：筑波大学教授）	 50 代 50 代	 2020 年 10 月 29 日 2020 年 11 月 10 日

B　物質材料研究機構

国際的な研究拠点として整備された国際ナノアーキテクトニクス研究拠点（MANA）ナノテクノロジー・材料科学研究者の中から 2 名を機構に依頼・選定した。

（4）インタビュー項目

半構造インタビューの調査項目は以下のとおりである。

表 6　外国人研究者の雇用部署管理者へのインタビュー内容

- あなたの仕事は？
- 年齢・国籍／最高学位
- あなたの管理部署の仕事内容や何が期待されているか教えてください
- いつから今の仕事をしていますか？
- 今の仕事に就いた経緯を教えてください
- あなたの管理部署には何人の研究者や事務職員がいますか？
- そのうち、外国人はそれぞれ何人ですか？
- 彼らをどのような方法で雇用しましたか？／雇用形態は？
- 外国人事務職員の役割は？
- 外国人研究者に何を期待しますか。
- あなたの管理部署で外国人研究者を生かしていくために、現在工夫していることや今後何が必要でしょうか？

3　結果

（1）職務内容

法律で「世界最高水準の研究開発の成果が見込まれる」と定める特定研究開発法人は、研究の卓越性・エクセレンスへの要求が高い。このため、研究分野・領域に関わりなく、研究実績への業績圧力が強いことが共通していた。

大学に籍を置く研究者についても、大学においては教育へ求められるエフォートは低いといえる。教育、研究、社会貢献に関するうち、教育面が大学運営の学内業務の一部が免除されていると回答した研究者が多い。

このため、主たる業務は競争的資金の獲得、新たなメンバー獲得や円滑な人間関係の維持を含む研究室内のマネジメント、そして何よりも重要視されるのが、自身の専門分野の研究の先駆性の開拓、具体的には、ハイインパクトとされるジャーナルへの学術成果の出版である。

その水準と目標値については、外国機関のクロスアポイントメント機関などでは、より明解に存在しているようである。物理学系であれば、Nature、Science 誌といった学際誌だと数年に 1 本、国際学会誌などでは毎年 1 本など、物質材料研究機構では、材料系という単一分野なので、インパクトファクターが 10 を超える学術誌など、階層分けされたジャーナル群があり、そのレベルに目標がそれぞれ世界水準の相場が研究領域別に存在している。この水準はおそらく、世界のトップ研究機関では、トップ研究者で共有された相場感がある。

なお、留意点としては、物質材料研究機構では、学術雑誌インパクトファクターを目安にして

いるが、この目標は当該研究機関が材料分野というカテゴリの研究と合致していることから、かろうじて首肯されるものである。分野が異なるとインパクトファクターがことなることから、理化学研究所のような組織でこのような業績基準を設定したら明確な弊害が生じることには注意が必要であることにはいうまでもない。

（2）年齢・国籍・最高学位

研究者の履歴をみると、①及び③は、海外大で博士学位を取得している。その他は、国内大学で学位を取得している。理化学研究所の主任研究者①~③については、アカデミックポストに就く前に海外でポスドクの経験がある。一方、物質材料研究機構の研究者④⑤は、いったん国内の大学のアカデミックポストを経験した後に海外経験をしている。

こうしたことは、材料系の研究はかつて日本が世界でトップの論文数を誇った時期もあり、インタビュー対象者が教育を受けた時代とも重なる。このため、日本国内で世界に伍する研究者が自前で育成可能であったともいえる。一方、その他の理工系の研究領域では、研究推進に、国際的な学術ネットワーク自体に属していることが大きく作用しているものと考えられる。

（3）研究管理者としての期待

研究管理者としての期待には、期待されている役割のうち外部資金獲得のウエイトが高いことが共通している。論文と並び外部資金獲得が業績圧力として採用している様子がうかがえることが共通している。

このことは、研究機関のミッションと歳出・歳入構造に依存しているといえる。理化学研究所はそれぞれの部署がそれぞれのプロジェクトがあり、その関連資金で運営されていること、また物質材料研究機構では、拠点については、経常的な運営費交付金ではなく、国際的な拠点形成のための特定目的等の補助金・委託費等によってその運営が行われることに由来していると考えられる。

（4）現職に着任までの経緯

いずれの主任研究者 PI も、公募を経て選考されて採用されている。公募書類を送付するまで、機関とは接点がなかった者も多い。また、研究所の立地と出身大学との立地の地理的近接性の関係から恩師の勧めで公募に至ったケースもみられる。

全般的には、国際的に通用する研究成果を追求する公的研究機関であることから、メリトクラシーが徹底されていることがうかがえる結果となった。

一方、外国のクロスアポイントメント先では、相手側からスカウトされる、共同で実施したプロジェクトで継続して勤務するなど、日本の側では、受け身の公募であるのに対して、外国の機関では、積極的にタレントをサーチしてスカウトするという人事に対する姿勢の際も感じられた。

（5）研究管理・研究室の体制

どの研究室の編成も、10 人弱~20 人未満程度の規模の研究室のスタッフ数である。その構成は、国立研究開発法人の性質を反映して、無期雇用の定年制研究員、ポスドク研究員、、大学を兼務している場合は大学院生、という研究スタッフ、さらに、アシスタント、パート等の研究補助者という構成が一般的である。この点については、大学の理工系の実験系の研究室と大差がない。

しかし、研究支援のための正規の事務職員が研究室にサポートに入る場合と全体からの支援のみで入らない場合があり、バイリンガルの事務職員の研究支援が、大学等に比べて手厚く、特定研究開発法人ならではの支援体制となっている。

（6）外国人研究者の状況

ポスドクの過半数もしくはそれを超えるが外国人研究者といった構成が一般的である。大学院生がいる場合も同様な傾向がみられた。さらに、物質材料研究機構では、定年制職員に採用されている外国人研究員も一定数みられている。研究上の国際流動性という範囲を超えて日本への高度研究人材の定着がみられる状況が生まれていることに注目されてもよいであろう。

なお、研究室内での言語は、英語を公用語としているため、研究上はコミュニケーションの課題はない。一方、外国人としてひとくくりにすることよりも出身国によって、ハングリーさに差があることなど、国の発展段階と経済、少子化の状況、民族性や国民性、地域性によって研究上のスタンスが異なることから、そうした差異に配慮して、テーマ設定などを行っていると回答した研究者もいた。

（7）外国人研究者の採用方法・経緯

採用方法には、公募、相手方からのポスドク受け入れの依頼、さらに自身もしくは組織の研究の国際ネットワークの中からの推薦・紹介という 3 つのルートがある。

日本人の場合は、公募に関しては、自身の研究室に最も優秀な人材を囲い込む傾向が強いので、これに対処した採用を行うと答える者もいれば、たまたま優秀であったので採用したと回答した者もいた。

しかし、外国人研究者の採用に関しては、純粋な公募や自己推薦による PR よりも、ウェットな関係が重視されているようである。即ち、国際学会等の場でできたコンタクト、海外の共同研究者からの推薦など、何らかの接点が不可欠ということであった。

この理由は、英語圏でもない日本で研究生活を行うことは、研究面のみならず生活面でもメンタルヘルス上もいろいろ気を配る必要があり、単純な実績や能力ではなく、様々な人間性も含めた選考・採用を行っているようである。

このため、基本的には、国際研究ネットワークの中での一流研究者からの推薦重視の採用を行っているといってよい。このことは、特に日本特有の事情ということではなく、国際的な「見えない大学」の中での共通合意に基づき行われる国際的慣行が、特定研究開発法人の国際性を重視する部門では行われているということに他ならないといえる。

（8）外国人研究者への期待

外国人研究者への期待には、短期と中期・長期的な期待の２つがある。いずれもほぼ共通した回答があった。

まず、短期的には、研究上の業績を挙げることである。このことは、研究室のテーマ設定との近接性、対人スキル、その他能力で推し量るできるもので、いわば個人の資質に還元される要素である。

次に、中長期には、国際的な研究ネットワーク形成がある。国際的な頭脳循環の中でネットワークを拡大していくことが、自身の研究活動に長期的にはプラスに働くことが、自身の国際経験やネットワークから確信していることによるものだと思われる。外国人研究員のその後のキャリアは、母国に戻って、大学で教授職についている方が多く、採用に際しては PI が推薦状を書いていることが多い。

これらは国際的な研究競争の中では、日本固有のものではなく、国際的に共通であり、国際性の重視が卓越性につながるという、ネットワーク効果・集積効果を企図したものである。また、こうした人的ネットワークのつながりを重視する利己的な面だけではなく、人間的な個人の付き合いが、信頼のベースになっているようである。

（9）外国人研究者の活躍のために必要な措置等について

研究室運営上のマネジメントの課題とも対応するが、ほぼ全員に共通する回答が、研究上のものではなく、研究生活に付随する日本における文化面に配慮した日常生活支援に課題がある。

これは、研究室内では、日常会話も含めて英語でコミュニケーションができるのに対して、日常生活、特にビザなど公的機関での手続き等に関してはこれが不可能であるからである。このため、各研究室単位でアシスタントがバイリンガルで対処する場合、機関の事務職員が専門的に対応する場合、実情に応じて対処しているといった事例がみられた。

さらに、宗教上の理由での食事の制限（ハラルフード）などについては、同じ国出身者同士で機関を超えて相互扶助する場合などがあるとのことであった。こうした食や文化に関するサポートも外国人の活用を本気で進める場合には、むしろバイリンガルでの支援事務は重要な事務であると認識する必要がある。

４　考察

（1）経済安全保障と基礎研究

インタビュー対象者の中に、中国の進める千人計画の選考に漏れたものの、自治体政府の資金によりクロスアポイントメントで雇用されている研究者がいた。

昨今、わが国でも経済安全保障の観点から技術流出に関しての議論が盛んになっているが、経済安全保障上の機微技術と基礎研究に関しては、議論の粒度を挙げて峻別しながら行う必要があると考えられた。

例えば、基礎物理学の研究では、すべてが公開データとなるので、軍事研究への転用等には距離がある。さらに、国際的に最新状況を内部で知りうる立場にあることが、逆に情報収集の可能性と人的ネットワークを拡大するからである。

（2）理化学研究所と物質材料研究機構の違いと共通点

理化学研究所は、日本人外国人に限らず基本の雇用が任期付きで5年程度の期限付き雇用を原則する機関である。このため、この中に自然な形で外国人研究員がメリトクラシーベースで入る余地があった。

これに対して、物質材料研究機構では、国立試験研究機関を元としていることから定年制職員が多い傾向がある。こうした中で国際化を進めるためには、いわば出島のような国際化に特化した組織を設置する形で拠点形成が進められている。この結果、短期間に論文業績でも目に見える成果を上げることができた実績がある。

いずれの機関についても共通することは、特定研究開発法人として特に重点的な資金支援を受けて研究所が運営されていることである。それがゆえに、両機関ともバイリンガルによる他の機関に比べて手厚い事務支援などが可能になっている。

5　考察と結論

公的研究機関の代表例として文部科学省所管の特定研究開発法人についての主に研究者（PI）のインタビューを行った。この結果、他の大学等に比べて重点支援される特定国立研究開発法人の優位性が明らかになるとともに、外国人研究員の活躍への期待というよりも、当然の常識となっていることが明らかになった。この点は、研究の優位性・グローバルな人材流動ネットワークへの包摂の成功事例として評価されるべきあろう。

一方、機関の国際化の実現・制度化という意味では一定の成功を収めているということであるが、日本への高度外国出身の人材の定着という観点からはまだ解明されていない点も多い。今回の調査・補足インタビューでは、産休の取得等、日本人同様に定年制職員及び主任研究者に昇進する外国籍職員が存在してることもわかった。

この日本への定着を分ける要因は何かという点については、いみじくも課題とされた日常の生活支援に関することである。今回のインタビューでは、物質材料研究機構では、半世紀にも近い国立研究所の集積を進めた「つくば研究学園都市」が実現するバイリンガルの事務環境や食事・文化への対応等の地域固有の要因も大きいようにうかがえた。

今後の研究に向けた仮説としては、こうした文化的要因の扱いについては、日本国籍の配偶者・家族の存在する事例多く日本社会への同化が定着を促進する要因とみられるかもしれない。とはいえ、同じ出身国同士での日本での婚姻・つくばでの定着し定年制職員となる事例もあり、一概に言い切れない面もある。

さらに、出身国によって異なる研究への姿勢は、母国の文化背景又は経済状況のどちらにより強く依存するのか？いわゆる、経済的要因で説明される高度人材のプッシュプルモデルを超える

定着の要因は果たしてありうるのだろうか？こうした問いに答えることが焼死高齢化で構造人材が不足する我が国の処方箋になる。

一方、本調査の含意と限界としては、特定国立研究開発法人という重点投資された国立研究開発法人の実情のみに焦点を当てている。公的研究機関で機関数の多くを占める地方公務員の身分を持つ地方公共団体の公設試験研究機関については扱ってはいない。これらは、地方公務員たる身分を要する場合、法律上外国籍である場合公権力を行使する業務への異動はできないこととされている。こうした実態は、まだ未解明である。

とはいえ、国際的に競争可能な研究環境を整えようとした場合、一定の外国人研究者の活躍の機会と今後のキャリアパスが開ける機会が着実に生まれているのもまた事実である。引き続きこのテーマでの調査を継続していくことが望まれる。

参考資料　日本の独立行政法人一覧（令和３年８月１日現在）

（内閣府所管）３
○国立公文書館
　北方領土問題対策協会
☆日本医療研究開発機構
（消費者庁所管）１
　国民生活センター
（総務省所管）３
☆情報通信研究機構
○統計センター
郵便貯金簡易生命保険管理・郵便局ネットワーク支援機構
（外務省所管）２
　国際協力機構
　国際交流基金
（財務省所管）３
　酒類総合研究所
○造幣局
○国立印刷局
（文部科学省所管）22
　国立特別支援教育総合研究所
　大学入試センター
　国立青少年教育振興機構
　国立女性教育会館
　国立科学博物館
★物質・材料研究機構
☆防災科学技術研究所
☆量子科学技術研究開発機構
　国立美術館
　国立文化財機構
　教職員支援機構
☆科学技術振興機構
　日本学術振興会
★理化学研究所
☆宇宙航空研究開発機構
　日本スポーツ振興センター
　日本芸術文化振興会
　日本学生支援機構
☆海洋研究開発機構
　国立高等専門学校機構
　大学改革支援・学位授与機構
☆日本原子力研究開発機構
（厚生労働省所管）17

勤労者退職金共済機構
高齢・障害・求職者雇用支援機構
福祉医療機構
国立重度知的障害者総合施設のぞみの園
労働政策研究・研修機構
労働者健康安全機構
国立病院機構
医薬品医療機器総合機構
☆医薬基盤・健康・栄養研究所
地域医療機能推進機構
年金積立金管理運用独立行政法人
☆国立がん研究センター
☆国立循環器病研究センター
☆国立精神・神経医療研究センター
☆国立国際医療研究センター
☆国立成育医療研究センター
☆国立長寿医療研究センター
（農林水産省所管） 9
○農林水産消費安全技術センター
家畜改良センター
☆農業・食品産業技術総合研究機構
☆国際農林水産業研究センター
☆森林研究・整備機構
☆水産研究・教育機構
農畜産業振興機構
農業者年金基金
農林漁業信用基金
（経済産業省所管） 9
経済産業研究所
工業所有権情報・研修館
★産業技術総合研究所
○製品評価技術基盤機構
☆新エネルギー・産業技術総合開発機構
日本貿易振興機構
情報処理推進機構
石油天然ガス・金属鉱物資源機構
中小企業基盤整備機構
（国土交通省所管）15
☆土木研究所
☆建築研究所
☆海上・港湾・航空技術研究所
海技教育機構
航空大学校
自動車技術総合機構
鉄道建設・運輸施設整備支援機構
国際観光振興機構
水資源機構
自動車事故対策機構
空港周辺整備機構
都市再生機構
奄美群島振興開発基金
日本高速道路保有・債務返済機構
住宅金融支援機構
（環境省所管） 2
☆国立環境研究所
環境再生保全機構
（防衛省所管） 1
○駐留軍等労働者労務管理機構

☆印、★印の法人は、国立研究開発法人（27 法人）、そのうち★印の法人は、特定国立研究開発法人による研究開発等の促進に関する特別措置法（平成 28 年法律第 43 号）に基づいて指定された法人（３法人）

15.　日本の人文系研究所における外国人研究者に関する調査－外国人の特性がフルに生かされているのか？

李敏（信州大学）

はじめに

本章では、人文系研究所に務める外国人研究者に焦点をあて、日本社会がどのような外国人研究者を求めているのかについて、4 人の外国人研究者へのインタビューを通して考察を試みる。

知識基盤社会において、高度な専門知識を持っているいわゆる「高度外国人材」を獲得するために、世界各国で激しい競争が繰り広げられている。日本も経産省の『通商白書 2005』に初めて「高度外国人材」の定義を明記し、優先的にこれらの外国人材を受け入れることを推奨した。この白書によると、「高度外国人材」とは、「専門的・技術的分野で就労する外国人のうち，例えば，各国がその専門的な知識や技術の獲得を争うような，より高度な知識や技術を有する外国人労働者」である。さらに、2009 年の高度人材受入推進会議報告書『外国高度人材受入政策の本格的展開を』（2009 年 5 月 29 日）においては、「高度外国人材」について更なる詳細な説明が行われた。この報告書では、「高度外国人材」を「国内の資本・労働とは補完関係にあり，代替することができない良質な人材」,「わが国の産業にイノベーションをもたらすとともに，日本人との切磋琢磨を通じて専門的・技術的な労働市場の発展を促し，我が国の労働市場の効率性を高めることが期待される人材」と定義している。その定義を簡潔にまとめれば，「高度外国人材」とは，日本社会に新風を吹き込むようなイノベーターである。日本が海外から受け入れようとするのは，人口減による人手不足の「代替型」の人材ではなく，日本人のない特質を持つ「補完型」の人材である。

ところが、「高度外国人材」に関する多くの研究と調査によると、高度外国人材の中には、安定的な雇用を求めて日本企業に就職したという日本人の性質に近い「代替型」の人材が少なからずいる（明石，2010；井口，2015，2017；五十嵐・明石・駒井洋，2015；李，2019）。また、本研究グループの大膳氏が理化学研究所に対する調査では、外国人研究者の採用、研究への期待および評価がすべて日本人と同じ基準であり、特別なことはしないという人事担当者の紹介があった。日本人・外国人を問わず、公平な評価基準で研究者を採用しているように受け止められるが、裏を返せば日本人に近いような特質を持つ「代替型」の外国人研究者を採用することも読み取れる。それなら、せっかく外国人研究者を雇用したのに、その特性をどのように生かしているのだろうか。本研究グループの白川氏が某理工系の研究機構で行った調査によると、外国人研究者が

帰国した後、日本とその出身国との間のネットワーク作りが強く期待されている。このように、外国人研究者を雇用した以上は、恐らく日本社会に対する高い理解という同質な部分とともに、外国人としての特質に対する補完的な要請も求められていることが推測できる。ただし、それぞれどの程度の同質性、あるいは補完性を求めているかについては、研究分野によって相当異なることが容易に想像できる。

研究主体別で見る外国人研究者に求めるもの

研究職に従事する外国人は、企業、大学、そして今回の研究対象でもある研究所に務める者に分けることができる。企業に務める外国人研究者は、企業の収益に直結するような応用研究が多く、外国人としての特性を発揮する余地が大学と研究所に務める外国人研究者と比べて少ないため、「代替型」が多いと考えられる。

一方、大学に務める外国人研究者は、教育と研究の両方を担当することが多い。外国語のみを教えるいわゆる「外国語教員」や、専門の授業を英語で教える外国人教員は、外国人としての特性をフルに生かされる典型的な「補完型」の外国人である。それ以外の専門分野においては、外国人教員が教育と研究、ひいては管理運営も行わなければならないため、日本語に対する要求が高い。特に人文社会系の外国人教員は、日本人並の高度な日本語が要求されている。この場合は、必然的に日本人との代替可能性が要請されている。

これらに対して、研究所に務める外国人は、研究中心の仕事に従事するため、自然科学系などのように英語が共通語である専門分野では、日本人、外国人を問わずに同じく英語を通じて仕事することが多い。したがって、外国人の採用は日本国内に限らず、世界的な範囲で行うことが可能である。実際、本研究グループの調査では、理工系の研究所の外国研究者の 8 割程度が海外の大学で最終学歴を取得しているという調査結果がある。理工系の研究は、国家の境界線を超越した普遍的な学問なので、「日本」という国を常に意識する必要もなく、比較的に開放的な環境に置かれている。

一方、人文社会科学系の外国人研究者は、専門分野によって、求められるものがかなり異なる。日本における人文社会科学系の研究所は、例えば日本文学、日本歴史、日本哲学、民族学、民俗学などのような「日本学」研究を実施する人文系の研究所と、社会学・経済学などのような比較的に世界的共通性を持つ社会学系の研究所に分けることができる。前者は、人間文化研究機構の傘下にある国立歴史民俗博物館、国文学研究資料館、国立国語研究所、国際日本学研究センター、総合地球環境学研究所、国立民族学博物館などが代表的であり、後者は例えばアジア経済研究所、大学入試センター、大学改革支援・学位授与機構、労働政策機構・研修機構などのような研究機関が挙げられる。経済学、社会学などのような一部の専門を除き、仕事用語がほとんど日本語であるため、外国人がこうした研究所に務めるためのハードルが極めて高い。日本の大学で学習経験をもち、かつ日本語が堪能である外国人がほとんどである。さらに実際の研究テーマについて

は、「日本的」特徴の部分を帯びているのが多い。

また、自然科学系の研究所と比べ、人文社会科学系の研究所の規模が小さいという特徴が挙げられる。

表 1 研究主体、組織別研究関係従業者数

自然科学 Vs.人文社会科学

研究主体および組織	研究機関数（A）	研究者数（B）	研究機関規模（B/A）
自然科学	**2,237**	**267,665**	**120**
非営利団体	307	7,337	24
公的機関	425	29,036	68
特殊法人・独立行政法人	70	18,240	261
大学等	1,505	231,292	154
人文・社会科学	**2,410**	**105,816**	**44**
非営利団体	84	970	12
公的機関	70	1,496	21
特殊法人・独立行政法人	13	705	54
大学等	2,256	103,350	46

出所：総務省統計局 2020(令和 2 年)「科学技術研究調査」 第 1 表より作成

表 1 は研究主体、組織別関係の従業者数について、自然科学と人文社会科学別で見た内容である。大学も含まれているので、研究機関数は人文社会系のほうが若干多いものの、その規模は圧倒的に小さい（自然科学：機関数 2,237、規模 120 人／機関）、人文社会科学：機関数 2,410、規模 54 人／機関）。一機関あたりの研究者数が最も多い特殊法人・独立行政法人格の研究所においては、自然科学系の規模が人文社会科学系より多いという図式も存在している。従業者を外国人に限定すると、人文社会系の研究所に務める外国人研究者がさらに少数派になり、所属機関から組織的な支援も得がたいと推測できる。

人文系研究所に務める外国人研究者に対するインタビュー調査の結果

調査の概要

表 2　調査の概要

	調査機関	専門分野	調査時期	出身国	学士	修士	博士	日本語能力	英語
A	ア研究所	地域研究	2020年11月11日	東アジア	母国	日本	日本	流暢	流暢
B	ア研究所	経済研究	2021年7月27日	東アジア	母国	日本	日本	流暢	流暢
C	ア研究所	経済研究	2021年7月27日	東南アジア	日本	日本	単位取得	流暢	流暢
D	イ研究所	日本語学研究	2021年7月30日	東南アジア	母国	母国	日本	流暢	母国語

表 2 はインタビュー調査対象者の概要を掲載したものである。コロナ禍の中で、全ての調査は、ZOOM、WeChat などのオンライン会議ツールを通して遠隔に実施された半構造化インタビューである。A、B、C はアジア地域、及び発展途上国の社会・政治・経済の研究機関に所属している。中では、A は東アジア地域の政治社会の研究、B と C は出身国及びその周辺地域の経済・企業経営の研究に従事している。D は外国人でありながら、AI 技術を駆使して日本語研究を行う先駆的研究者である。

調査の結果

（1）言葉について

日本での留学経験が長く、日本で最終学歴を取得した 4 人の研究者は日本語が母国並みの流暢さである。高度な日本語に加え、英語も国際会議の出席、論文発表ができるような高いレベルに達している。特に D の出身国の公用語は英語であるため、英語による日本語学の発信が積極的に行われている。日本語をはじめとする高い語学力を持つことはこの 4 名の人文社会系の研究者の共通する特徴と言えよう。日本語、日本文化に精通するため、日常生活および仕事に特に不便を感じたことはない。逆に A、B、C は出身国およびその周辺地域をフィールドにしているので、数カ国語を操る語学の優勢は仕事に大いに役に立っている。

アジアおよび発展途上国の地域研究を中心とするア研究所においては、研究者を採用する際に、英語よりも現地語と日本語の能力を重視することが伝統と言われている。しかし、英語中心の国際学術ランキングの影響で、ア研究所において英語による論文の発表が重視されるようになるにつれ、A、B、C が英語で研究発表することを意識し始めた。経済・経営研究をする B と C は英語による研究のハードルが若干低いのに対して、政治・社会などの地域研究をするAにとっては、現地語の使用が多く、英語論文を書くのに時間がかかる。このような研究の上で使う言語の相違によって、研究成果の量に違いが必然的に生じてくる。したがって、Aは「日本語で日本に留学に来たにもかかわらず、日本の大学と研究機関では英語が使える人材の活用にシフトする傾向にあるため、ジレンマを感じています。」と述べている。

（2）日本で仕事をする上でメリット、デメリット

日本で仕事をする上でメリット、デメリットについて聞いたところ、4 人がいずれも「自由な研究環境」を現在の研究所の最大なメリットして挙げている。所属する研究所はいずれも関係分

野研究の最高峰であるため、豊富な研究の蓄積およびネットワークを持っているだけでなく、研究経費もかなり潤沢である。さらに、大学と異なり、授業の負担がほとんどないうえ、論文に関するノルマがないため、興味のある研究に専念できることは、国内外の同業者と比べ、掛け替えのない自由な環境と言える。

このような恵まれた環境の中で、4 人はいずれも数多くの質の高い研究成果を世に送り出した。例えば、D は古代・近代・現代の日本語、東アジアの言語のデータベース、コーパスを構築した主要研究者の一人である。データベースの構築、システム開発能力が買われ、巨額な報酬で外資系のソフト会社にスカウトされ、AI の開発に 1 年間従事していた。しかし、本人曰く「金銭の奴隷になりたくない」から、高給な仕事を蹴って、再び研究者に戻ったという異色の経歴があった。海外の同業者と比べ、所得が決して高くはないものの、自由に研究できる環境は日本で仕事をする上での最大なメリットであると、A と C が見ている。さらに、C は終身雇用制度がもたらした安心感が他国で研究職に従事する友人と比べる際、大きなメリットとなっていることを強調している。

また、日本留学を通して構築したネットワークが日本で仕事をする上でのメリットの一つである。

「日本語で日本に留学に来たため、日中両国の間のネットワークの構築ができました。そのような日本留学の経験は日本に残る場合の方がより活用できるうえ、留学の効果も高くなります。」

ア研究所は日本国内の最も権威性のある地域研究の研究機関であるため、同じ研究テーマに関して、異なる地域を研究する同僚と切磋琢磨することが大変刺激になる（A、B、C）。地域研究は時間をかけて現地の観察をする必要があるため、研究成果が出るまでの周期が長い。同僚の間に、このような研究の特性に共通理解を持っているため、所内での評価に関してはみな大きなプレッシャーを特に感じていないようである。しかし、ア研究所、日本から一歩離れると、この独特の研究と評価の手法は海外では通用しないというデメリットを感じている（B）。

D はまた日本的組織運営の方法に不満を示している。

「研究環境が整っていますが、昇進システムは全く分かりません。実際大学に採用された時は、給料などに関する説明は一切ありませんでした。賃金に関する交渉の文化は、この日本には存在しません。」

さらに D からは日本のはんこ文化を激しい批判があった。漢字圏国家以外の国の出身者にとっては、理解しがたい文化の一つであろう。

C は研究フィールドから地理的に遠いことが研究を実施する際の最も大きなデメリットと捉えている。

また、学術世界で流行っている各種のランキングはこの自由に研究する場に多大なインパクトを与えたらしい。インパクトファクターの高い英語ジャーナルに投稿して掲載されたら昇進が早くなることは最近のトレントのようである（B)。このような評価システムの変化は、長年の入念なフィールド研究が前提となる地域研究者にとってはかなり不利であると A が述べている。また、地域研究者が研究対象国の言語はできるものの、英語に長じるとは限らないので、英語論文数という評価制度はア研究所において必ずしも妥当とは言えない。今までは地域研究者がア研究所に数年間務めた後、大学に転出するというのが慣習だったが、英語論文の有無が多くの大学における教員採用の条件となったあとは、先輩研究者の大学への転出が激減した。この結果、若手の昇進がますます困難になりつつある。

（3）現在の職場からの役割期待と外国人研究者としての貢献

ア研究所は若手研究者に対して、即戦力を求めるよりも、時間をかけて徐々に一人前の研究者に育て上げるという伝統的な人材養成方法をとっている（A)。研究者に、潤沢な研究費を提供しているだけでなく、シニアの教員と組んで若手を養成する慣習が続けられている。コロナ前は、研究者たちは年に 2 回以上の海外出張があり、数年間勤務したあと、2 年間の在外研究のチャンスも与えられる。日本内外の最先端研究に常に関わることができるメリットがある。

A、B、C は研究以外に、関係省庁・企業へのコンサルタント、発展途上国の公務員を対象とする英語の授業、市民向けの講座などのように、研究成果を社会に還元するような仕事に積極的に取り組んでいる。D は、日本語という典型的な日本学の研究をしているが、外国人の目線からのユニーク研究が職場に強く期待されている。

4 名の研究者は職場のこれらの期待にいずれもうまく応えている。A は院生時代から日本と母国の間の架け橋の役割を目標に、民間交流に取り組んでいる。入所後は、仕事が多忙になったにもかかわらず、できる範囲で民間の交流事業を継続している。政府、企業のコンサルタントを積極的に担当しているため、より広い意味の架け橋の役割を果たしていると考えられる。C は、日本における数少ない出身国に関する研究者であるため、日本の ODA を実施する際に正確な情報発信に大いに貢献している。

このように、日本と出身国との間に質の高いネットワークを構築することが外国人研究者が最も期待されている役割であると同時に、最も貢献できる役割でもある。

（4）日本で外国人研究者が働く上での環境

ア研究所とイ研究所では年功序列制度を採用しているので、国籍を問わず、昇進、収入、仕事量などに関してはほぼ同じ基準が適用されている。外国人だからと言って、差別されることも優遇されることも一切ない。一見平等的であるが、外国人である以上は、日本人の研究者と異なる問題を抱えている。例えば、海外派遣の場合、外国籍が原因で日本再入国の際には煩雑な手続きを強いられている。そもそも日本の人文系研究所は日本人の雇用を前提に制度設計が行われてきたので、少人数の外国人研究者のために制度を変更することが前向き的ではない（C)。しかし、

このような古い制度設計は、研究所の更なる国際化の推進の足枷になりかねない（A、D）。

一方、D は日本の会議文化に不満を表している。教授による自治が極めて望ましいことだが、研究の時間を圧迫してしまうので、変えてほしいという強い要望がある。

不満はあるものの、4 名の研究者が現在の研究環境には概ね満足している。ただし、ア研究所はそもそも海外を研究対象とする研究機関であるため、外国人か日本人かという区別はあまりしないという特殊性もあり、なかなか一般化はできない（A）。

懸念材料もある。近年、母国と日本との関係が悪化する傾向にあり、研究所内の空気も若干変化したように感じていると A、B の紹介がある。外国人研究者よりも、日本人の採用に切り替えられるような兆しが見られる。

日本以外の第 3 国に移籍する考えがあるかどうかを聞いたところ、英語堪能の D は欧米からのオファーが少なからず来たが、日本の環境がよいということで今の段階では特に考えていないそうである。一方、英語が母国ではない A、B、C は、言語によるハードル以外に、日本で取得した学位が欧米圏での通用性が若干低いため、移籍を断念せざるを得ないという話がある。

まとめ

本節では、日本社会が人文社会系の外国人研究者に何を求めているのかを 4 人の外国人研究者へのインタビュー内容をまとめたうえで、外国人研究者をいかに効率的に生かすのかについて考察を試みる。

ア研究所に限って言えば、そこに務める外国人研究者は、限りなく日本人研究者の特質（同質性）が求められている。ただし、今回のケーススタディは外国を研究対象とする研究所なので、日本人研究者も外国人の特性を持っていることが他研究所とかなり異なっており、一般化はできない。

「日本学」を研究する外国人研究者は、高度な日本語の習得、および日本文化と日本社会への深い理解が必須である。この意味では、研究職につく前に入念な日本語による教育、研究職についたあと時間をかけて養成する必要がある。この意味では、ア研究所のやり方が古いものの、人材養成の面から言えば成功しているとも言えよう。

ただし、このような伝統的な人材養成方式が、英語による研究発信のニーズの高まりによって、徐々に崩れ始めている。しかし、非英語圏の人文社会系外国人研究者にとっては、英語で発信するハードルが極めて高い。この点は理工系の外国人研究者と大きく異なるであろう。

英語を重視するという評価方法のもとで、日本において日本語で育成した外国人留学生の評価を低くすることに繋がる。このことは、必然的に日本留学の価値の低下を招いてしまう。したがって、外国人留学の受け入れ方針と教育プログラムの編成、および外国人研究者の招聘に関しては、専攻分野別で慎重に考慮する必要がある。

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16. International Researchers in Japanese Company: Preliminary findings of their motivations, work roles, and contributions

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Introduction

International mobility of human resources has become a central aspect of globalization and the global competition for talent is growing. The migration of talent now plays an important role in shaping skilled labor forces throughout the OECD area (OECD， 2008). Many OECD countries and a growing range of non-member economies aim to attract highly-skilled researchers and scientists. To develop global human resources and improve the international competitiveness of Japanese industry and business, Japan's companies have made efforts to attract excellent international researchers to Japan and expect them to play an active role in their workplaces.

The Japanese government has launched policies to attract foreign talents to compete with other countries in the global economy and accommodate the highly specialized domestic industrial structure (Murakami, 2009). Japan's policy on foreign workers began with the Revised Immigration Control and Refugee Recognition Law in 1990, which is designed for unskilled workers (Fukushima, 2018). Legislation targeting knowledge workers has been in place since the beginning of the 2000s, such as the mutual recognition of national qualifications as part of the 2001 IT talent acquisition policy (Akashi, 2009). The number of foreign workers in 2020 is 1.72 million, 2.5 times more than 10 years ago.[13] Moreover, since "Points-Based Preferential Immigration Treatment for Highly-Skilled Foreign Professionals" has been issued in 2012, [14] the total number of certified cases has reached to 29,084 by June 2021, and the goal is to certify 40,000 highly skilled foreign professionals by the end of 2022.[15]

The flows of global human resources are impacted by various factors, such as academic or professional reasons of career advancement, success to better research funding, higher-quality research infrastructures, opportunity to work with excellent scientists, and more freedom to debate; economic

[13] https://www.moj.go.jp/isa/content/001335263.pdf
[14] https://www.isa.go.jp/en/publications/materials/newimmiact_3_index.html
[15] https://www.moj.go.jp/isa/content/930003821.pdf

incentives of opportunities for better pay; family or personal reasons, political causes, and culture factors (OECD, 2008; Huang, 2018). However, the design of appropriate policies to attract international researchers to work in Japan requires to have a better understanding of their characteristics. Although the global mobility of human resources and the number of researchers working in Japanese companies have increased, little research has been made on their characteristics. The aim of this study is to have a better understanding of their motivations, work roles, contributions, as well as challenges facing them.

The subject of our study is international researchers who are hired in Japan where they were not born and/or where they did not receive their first post-secondary degree. In a strict sense, they are not citizens of Japan and they have master's degrees, doctoral degrees, or have postdoc experience and are employed by Japanese companies in research positions or research & development positions.

This paper first reviews previous studies and introduces research methods. Second, it analyzes the data of semi-structured interviews and discusses their motivations, work roles and contributions, and issues facing them in Japan. Finally, the study concludes by summarizing the major findings and offering implications for policy.

Literature review and research method

In the Japanese context, earlier studies on these topics are quite limited. Murakami (2007, 2009) explored the employment of foreign scientists and engineers (S&E) in Japan's research institutes, private companies, and information-service industries by focusing on the reason for employment, their incentives for migrating to Japan, and their roles and contributions. The study analyzed two surveys data, including one survey administered to employers and one to the foreign S&E conducted in 2004. The main findings are most foreign S&E doing the same work as Japanese S&E, and their performance is of a similar level. Key incentives for migration are Japan's high level of science and technology, economic factor, cultural and social aspects of Japan. Similarly, some studies conducted research on highly skilled foreign workers policy in Japan and Japanese immigration management (Akashi, 2010; Fukushima, 2018), as well as on the human resources strategies of companies and their motivations as hiring parties (Akashi, 2009; Li, 2019).

With the rapid progress of the internationalization of higher education and the revitalization of international mobility of human resources since 2000, the latest situation of international researchers in Japanese companies needs to be further researched and analyzed. In addition, since a quantitative survey does not provide a full and comprehensive picture of their motivations, work roles, contribution for Japanese companies, and challenges facing them, a qualitative analysis of international researchers is necessary.

However, up to now, it seems that no systematic and in-depth studies have been carried out on

the personal, educational, and professional identities of foreign researchers, their motivations, work roles, and contributions, as well as the challenge facing them.

This study focuses on discussing the following three questions.

1) What are the identity, motivations, work roles, and contributions of international researchers in Japanese companies?

2）How to provide them with a more favorable environment in which they can contribute to Japan and the international academic community?

3）How will Japan develop strategies and build recruiting systems to attract high-level international researchers?

Table1 Profiles of interviewees

Interviewee	Gender	Age	Nationality	Affiliation Type	Final Degree	Discipline	Japanese language level	Language used in the current company	Language used in research
A	Female	30's	China	Manufacture	Master	Engineering	Proficient	Japanese	Japanese
B	Female	40's	China	Pharmaceutical	Doctor	Immunity	N1 passed	Japanese	Japanese, English
C	Female	20's	Mongolia	Cosmetic	Doctor	Chemical engineering	N1 passed	Japanese, English	Japanese, English
D	Female	40's	The Philippines	Information industry	Master (completed doctoral course)	Computer science	N2 passed	Japanese, English	English
E	Male	30's	China	Information industry	Doctor	Information science	N1 passed	Japanese, English, Chinese	English, Japanese
F	Male	30's	Nepal	Information industry	Doctor	Information science	Basic	English	English
G	Female	30's	China	Manufacture	Doctor	Medical science	N1 passed	Japanese	Japanese, English
H	Male	30's	China	Manufacture	Doctor	Medical science	N1 passed	Japanese, English	Japanese, English
I	Male	30's	Taiwan	Pharmaceutical	Master	Chemical engineering	N1 passed	Japanese	Japanese, English
J	Male	30's	China	Manufacture	Doctor	Engineering	N1 passed	Japanese	Japanese, English
K	Male	30's	China	Chemistry	Doctor	Materials	N1 passed	Japanese	Japanese, English, Chinese

To explore international researchers' motivations for coming to Japan and being hired at Japanese companies, qualitative interviews with international researchers from different fields and scales were employed. By focusing on the theoretical sampling representative samples (Tracy, 2019), we selected interviewees by considering their country of origin, gender, age, research field, and company size. Interviewees were recruited using a snowball sampling method, through private and public organizations and alumni associations. Due to the COVID-19 pandemic in 2020, All the interviews are conducted through online platforms, such as Zoom and WeChat. The study is still ongoing. We conducted semi-structured and open-ended interviews with eleven international researchers from 10 different

companies from September 2020 to January 2022 (Table 1). The participants came from China, Mongolia, the Philippines, Nepal, and Taiwan. The age range is from 20 years old to 40 years old. Depending on the participants, we used English, Chinese, and Japanese as the main languages. Nearly all interviews were undertaken according to the same interview questions and took about an hour. Among the interviewees, six foreign researchers are male and five are female. Their affiliations include companies of manufacture, pharmaceutical, cosmetic, and information industry. A majority of them have a relatively high level of Japanese, and most of them need to use Japanese or English for work and research, one interviewee said he also needs to use his native language-Chinese. They all graduated from Japanese universities, most of them are good at Japanese and English.

There are apparent limitations in the research. For example, the number of interviewees is not sufficient enough to fully explore the nature and variation of international researchers. Moreover, the number of participants from countries outside Asia needs to be increased.

Research findings

The motivations for working in the Japanese company

According to the analysis of interview data, several major motivations of international researchers can be found. Factors like professional advancement and favorable research environment are regularly mentioned by interviewees. They are similar to some previous studies (Murakami, 2009; Huang, 2018). A Nepal researcher in an information science company said:

> The main reason I chose this company is that I have a great chance to learn new technology. The working environment, salary, the bonus are also very good. (F)

Similarly, a female researcher from the Philippines emphasized that:

> The most attractive thing is the international atmosphere. High salary, good research environment, and I feel that the company cares about its employees. (D)

A Chinese researcher said:

> I can continue my doctoral research. In venture capital firms I must work in many aspects and, in the meantime, I can learn more. (E)

A female who also comes from China mentioned that:

> I want to work in Osaka and work at a big Japanese company will be relatively stable. I felt a good atmosphere during the interview. (A)

As mentioned, the good working environment and the opportunity to continue their advanced research, and economic reasons are considered to be important motivations for them to stay and work in the Japanese company. It can be assumed that international researchers from a country with a lower GDP per capita than Japan consider more economic reasons. For example, one interviewee from the Philippines asserted that:

> I earned a lot better than if I had worked in my home country. I can have more financial security than when I go home. (D)

However, it seems that economic incentive changes as the gap between the home country and the host country become smaller. A Chinese researcher who works in an information science company claimed that:

> The same technical job in China and the US would pay several times as much as this company. The salaries of Japanese companies are not at all advantageous compared to places like Shanghai and Shenzhen in China. (E)

Some female researchers value more about job stability, benefits, and humanity of the company. A female who works in a major pharmaceutical company mentioned that:

> My company is very humane, there are many supports for women or female employees who become mothers. It is easy to take leave when my child is sick. (B)

A Chinese researcher shared why he chose to work in Japan,

> The decisive reasons for staying in Japan are mainly two things. First, I am personally curious and don't like to stay in China, which I am already very familiar with, and Japan is still new to me even though I have been there for ten years. Second, I hope to use my international background to do some work or business in Japan in terms of Sino-Japanese exchange or cooperation. I think the experience of the corresponding ability to study in Japan, such as language, will not be available if I return to China. (K)

As the above examples show, international researchers tend to consider their own academic, linguistic, and cultural strengths in combination with the situation in the target country to make the best judgment for their development and life. In addition, interviewees mentioned other motivations, such as the safety of Japanese society and simple personal relationships.

All eleven interviewees keep their original nationalities. Only one interviewee considered changing his nationality, and some international researchers have a permanent residence permit or intend to apply for a permanent residence permit.

The interviewee stated the reason for considering changing his nationality:

> Japanese nationality may be more convenient if I do business internationally in the future. Chinese nationality requires a visa to go to many countries, which is more troublesome. (J)

Work roles and contributions

The existing research suggests that international researchers are sought for their specific knowledge or abilities, their language skills, and their knowledge of foreign markets (OECD, 2008). There is a high demand for the Japanese language in the workplace, meanwhile, English is required for research usually. Depending on job contents, the native language is also required. It can be said that international researchers in Japanese companies need multilingual ability.

In general, researchers in Japanese companies are mainly involved in basic research, applied research, and related product design and development. However, in most cases, they are asked to work according to the requirements of the company or department. We found that their priorities in work are research and product development according to the company's needs. Compared to international researchers in universities or research institutions, international researchers in the company seem to lack research autonomy and they need to be involved in product development according to company requirements (Huang, 2018). A Chinese woman who works in a major pharmaceutical company mentioned,

> My job is new drug R&D for related diseases. The most important thing is to read papers, get ideas, then report to my supervisor immediately. (B)

A Chinese researcher told us his work priority that:

> Skill up. Product development is part of my work while piloting new ideas is another part of the

work. The two parts complement each other. For a company, product development is of primary importance. (E)

However, A researcher who works in an American company in Japan mentioned that she has more freedom about work.

My work involves planning and developing IT systems in the company. Our company listens to what I want to do or want to commit to. Right now, the current work assignment I have is based on what I have committed to do. (D)

About the question of "what role you are expected to play in your current company?", a female from Mongolia mentioned:

My current company values diversity, and my company wants international employees to express their opinions from a different perspective than Japanese employees. (C)

A Chinese researcher said:

To promote the company's products to the world, need people with an international background. I need to explain technical things in English or Chinese in a phone meeting. Now my work must use three languages, Japanese, Chinese, and English. (E)

A woman from the Philippines explained:

In my case, since my company is a global company, I have the advantage of communicating with other staff in other countries. And since my work is in text processing, any text processing in English is handed to me. When we have international interns, I am asked to help with the intern. And since I have an N2 Japanese proficiency, I can communicate both in English and Japanese. (D)

We found that while their companies expect them to work as a researcher, they are also expected to help carry out some international affairs by taking advantage of their international background and multi-language ability. They are expected to make their contributions for Japanese society, especially for their workplaces by making more suggestions from an international perspective. However, several interviewees also indicated that their work content was not significantly different from that of their Japanese colleagues in the company.

Most of them think there is no difference in the promotion, appointment of administrative

position, salary, or workload between international researchers and local researchers.

Challenges of working and living in Japan

Work pressure and long working hours make them find it's difficult to balance work and life, especially for female researchers.

> Probably difficult to balance life and work. I think Japanese companies have longer working hours than other countries, and you must work very diligently. I will have less time outside of work. (F)

> There are few nursery schools, banks, and city offices have short opening hours and are closed on weekends. Lots of school activities and no consideration for the circumstances of working mothers. (A)

Even though they have a certain level of the Japanese language, they still feel that they encounter language problems at work. The lack of communication with Japanese colleagues may cause some misunderstandings and conflicts. As one interviewee said:

> I need to study, read papers, and work and research with a lot of pressure. Also, Japanese can't be expressed precisely. There are individuals, who are prejudiced against Chinese people and personally attack. (A)

In addition, we inquired international researchers in our interviews about how COVID-19 affected their work and life in Japan. A Chinese woman said:

> My husband and I both work and have two children. Before the pandemic, we had asked our parents in China to come and help take care of the children, but during the pandemic, they could not come to Japan due to visa control. Without the help of parents, it's difficult to balance childcare and work. (G)

A man from Taiwan mentioned that:

> If I go back to Taiwan to visit my family, I need quarantine, and I can't take a long vacation, so I haven't been able to go back. (I)

In addition, a Chinese working in Tokyo complained that:

When the pandemic first started, it was possible to work from home, but recently my company has required me to work at the office, and I was worried about getting infected from riding the tram. (H)

Discussion and conclusion

This study investigated the motivations, works roles, and contributions of international researchers working in Japanese companies and the challenges facing them. The contribution of this study is that it targets international researchers in Japanese companies, which according to the authors' knowledge has not been investigated comprehensively as a subject in previous studies. Previous studies analyzed foreign talent more at the level of government policy or at the level of individual Japanese companies. What are their characteristics, their work roles and contributions, and the difficulties they encounter in Japanese companies and society have not been well studied and analyzed. In addition, we investigated the impact on the work and life of international researchers during the pandemic.

Despite being based on a small number of samples, we have obtained some new findings as follows. First, the main motivations for working in the Japanese company, their priorities are professional advancement, research environment, academic pathway, economic reason, and social and cultural reasons in Japan. Changes in these factors influence their decision to stay and work in Japan or go to another country. Many of them only considered acquiring Japanese permanent residence, not Japanese nationality. Eight out of the eleven interviewees have considered leaving Japan to work in other countries. Since the possible reason is that they do not consider Japan as their destination, future studies should pay more focus to their mobility. This trend is consistent with the notion of a globalizing labor market in which the mobility of skilled workers is affected by changes in relative labor market conditions (OECD, 2008). Moreover, international researchers who are good at Japanese and somewhat deficient in English are more inclined to stay and work in Japan, in contrast to this who are better at English than Japanese will tend to consider other countries. One of our interviewees, a Nepalese researcher left Japan to work in the Norwegian branch of a large Japanese multinational company shortly after our interview with him (F). Due to the internationalization of the scientific sector, scientists are highly mobile at the international level, and researchers frequently move to other countries, often temporarily (Baruffaldi & Landoni, 2016).

Second, according to Huang's research (2018), the work role of international researchers in Japanese universities is primarily research and teaching. They have a great degree of research autonomy, while international researchers in Japanese companies are required not only for research, but also for product development, promotion, and the company's international business.

The contributions of international researchers in the Japanese company are the provision of

advice from international perspectives, international operation of companies, and integration of different cultures. It is assumed that international researchers will bring new insights to research, development, and perhaps to the ethos of the company. However, the effectiveness of the contributions of international researchers depends on the organizational arrangements of the company, the expectations on both sides, and other factors. In many cases, international researchers are not effectively integrated into international operations in Japanese companies. The lack of familiarity of international researchers with the norms and perhaps the politics of the company system may limit their participation in governance and other company functions (cf. Altbach & Yudkevich, 2017). It has also been mentioned in previous studies that Japanese companies do not make good use of international researchers (cf. Murakami, 2006). To compete internationally, Japanese companies should give more consideration to how to attract foreign talents and use their advantages wisely.

Finally, even though most of the interviewees have a high level of Japanese language ability, they still feel that there is a communication barrier with their Japanese colleagues. The study denoted that all of the interviewees earned their academic degrees from Japanese universities and most of them have high-level Japanese language ability. English language skill is also very important, especially when it comes to research. In addition, in some cases, they need to take advantage of their native language to help with international affairs at work. Therefore, for international researchers in the Japanese company, multilingualism with Japanese as the primary language is essential. One of the most important reasons behind this is that it appears to be difficult and unrealistic for Japanese companies to hire an international researcher who does not understand Japanese at all. How Japanese companies can provide a multilingual and multicultural communication environment is still a challenge. In addition, providing international researchers with support and assistance from various aspects to better serve the company is still an issue.

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17. The predictors of full-time Chinese/Korean faculty and British/American faculty's job satisfaction in Japanese universities

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Introduction

Given the acknowledgment that international faculty has become an integral part of building human capital and world-class universities, their recruitment has intensified among the global competition (Li et al., 2018). Japan is no exception, who carried out various policies and strategies, such as G30 and Top Global University Project, to attract international talents globally. Since the early 1980s, the proportion of international faculty in Japan has increased from 1.17% in 1983 to 5.0% in 2021 significantly (MEXT, 2021). As the numbers increase, their value has also been gradually recognized, including the maintenance and extension of university competitiveness through academic activities and numerical presence (Cantwell, 2011). In addition, as the owner of a foreign culture, they are associated closely with diversity, broadening international horizons and competency to the countries they went to (Altbach & Yudkevich, 2017). Moreover, the international faculty were engaged in special roles that Japanese faculty do not wish to or could not achieve in Japanese universities (Huang, 2018a; Tsuneyoshi, 2005).

Existing evidence illustrates international faculty's comparatively higher intentions of remaining at current positions and universities than their Japanese peers (Yonezawa et al., 2014). The extent to which their intention to stay is consistent with their actual retention behavior depends largely on the degree of their job satisfaction, which is a key predictor of faculty's retention (Lawrence et al., 2014). Since the departure of faculty would result in economic losses and significant disruptions in research and teaching programs (Kaminski & Geisler, 2012), retaining international faculty became extremely critical for the government and institutions administrators (Lawrence et al., 2014; Sabharwal, 2011). Therefore, it is worthwhile to develop an exploration of international faculty's job satisfaction in order to not only better serve them but also improve their retention (Mamiseishvili & Lee, 2018). However, despite the gradual increase in the research focusing on international faculty in Japan due to the recognition of their value until recent years, there remains a dearth of exploration into their job satisfaction. Given the fact

that different attributes largely lead to varied work roles, experiences, and perceptions, previous studies often address the demographical differences of international faculty, such as ethnicity (Wu & Huang, 2018), academic rank (Höhle & Teichler, 2013), and academic discipline (Yonezawa et al., 2014).

Based on the ideas of previous studies and the categorization of international faculty at Japanese universities (Huang, 2018), in order to develop a more tailored support system, the study seeks to investigate the predictors of international faculty's job satisfaction separately, that is full-time Chinese/Korean faculty and British/American faculty respectively as they were different significantly regarding both their demographic and academic characteristics. The data of a comprehensive national survey collected by Futao Huang from 2016 to 2017 in Japan was used. The study first provides the research background to better understand the research situation. The study then reviews the main methods, followed by the illustration of research findings. Finally, the study reflects on major findings and offers conclusions, limitations, and implications for university administrators, researchers, and policymakers.

International faculty in Japan's context

Since the 1990s, the mobility of international faculty has expanded in Japan (Huang et al., 2019). In order to combat the new changes and challenges caused by the diversified factors, such as globalization of economy, the internationalization of higher education, and increasing academic competition, a series of policies and strategies have been executed at various levels in Japan.

At an international level, with the development of the economy, the environment surrounding universities has been changing fast in recent years, to meet the diverse requirements of increasingly changing society and students, boundary-less mobility has been considered as the most effective way. Moreover, since the proportion of international faculty and students (5% each) have been used as important indicators in ranking universities, with the purpose of achieving high international status and being treated as a World-Class University, accepting talents from overseas became one of the effective measures globally.

At a national level, since the establishment of the Special Measures Act for the Appointment of Foreign Staff at National and Public Universities by the Japanese government in 1982, international faculty could be hired as full-time employees in Japanese national and public universities and could be promoted to any academic position, which improved international faculty's social status significantly. Moreover, in order to enhance the international competitiveness and promote the internationalization of universities, the Japanese government has launched various projects to attract highly skilled international talents, such as G30, Re-Inventing Japan Project, and Top Global University, facilitating the expansion of international faculty directly or indirectly.

At an institutional level, depending on the missions and traits of HEIs, there exist several

special universities and colleges in Japan, who emphasize the significance of attracting international faculty and students for their institutions. Based on their traits, these universities can be divided into 3 groups. The first group is the institutions including special departments whose goals are related to international issues. For example, Aizu University, whose mission is to “Advance Knowledge for Humanity”. The second group is the language universities whose goals are to produce graduates with several language skills and international competencies. A specific example of this type of university is Kanda University of International Studies, whose motto is “Words are the foundation of peace connecting the world”. And the third group is the universities including International Liberal Arts Department. For example, Akita international university, a new local university established in 2004. The aspiration of this university is to prepare students to be “leaders in a global society” so that they can contribute to “their local communities, their countries, and the world”. In addition to “learning in English and thinking in English” through small-class education in a wide range of fields, education based on cross-cultural understanding whose goal is to foster foreign language communication skills are also provided. As a result, all of the policies and strategies mentioned above stimulated the rapid growth of international faculty at Japanese universities over years.

Literature review

Review of the theories investigating the predictors of job satisfaction

The definition of job satisfaction is heavily contextualized according to the main purpose of the researchers. The most-used one is proposed by Locke (1976) as an emotional state of the employees towards their work or working experiences, which is a key term being investigated widely in various fields, such as sociology, psychology, and management. One of the first analytical frameworks exploring job satisfaction is proposed by Herzberg et al., (1959). A dual-factor theory was developed to illustrate the potential predictors of job satisfaction from two main dimensions. According to Herzberg et al. (1959), all the factors can be divided into two categories: the motivators factors that cause job satisfaction, such as recognition and collegiality, and hygiene factors that cause job dissatisfaction, such as salary and work environment.

Based on Herzberg’s dual-factor theory, Hagedorn (2000) developed a two-type construct to explain the job satisfaction of faculty, including the mediators and the triggers. In addition to the similar motivators and hygiene factors as proposed by Herzberg et al. (1959) (e.g. achievement, recognition, and salary), the mediators also consist of demographics (e.g. gender, ethnicity, and academic discipline), and environmental Conditions (e.g. collegiality, administration, and institutional culture). The triggers were defined as the changes that happened in life or work circumstances, such as transfers to new institutions,

advancements in academic rank, and significant life events. After the practical application of this framework and the test of its viability with a national database of college and university faculty (Hagedorn, 2000), it has been used widely in the education field.

Drawing on Hagedorn's (2000) two-type construct, Bentley et al. (2013) developed a simplified model specifically for higher education fields, which divided the factors into two categories, the mediators, contributing to job satisfaction, and the triggers, implying the academic and life changes.

Review of the empirical literature

Based on the theoretical frameworks mentioned previously, various studies have been involved in the exploration of the predictors of job satisfaction, which can be summarized into three broad categories, namely, demographics, work-related factors, and environmental conditions. Demographics refer to demographic attributes of employees, such as age, gender, and race/ethnicity. For example, previous studies indicate that female faculty tend to be less satisfied than their peer male faculty (e.g. Seifert & Umbach, 2008), and white people are more satisfied than other races in the context of western countries (Bender & Heywood, 2006; Glymour et al., 2004).

Work-related factors are the factors directly associated with employees' work, such as salary, achievement, and recognition. For instance, Iqbal et al. (2017) highlight the effective role of salary in employees' job satisfaction and retention. The recognition of faculty members (Ismayilova & Klassen, 2019), and their funding for research (Trower, 2012) are acknowledged positively relating to their job satisfaction.

Moreover, environmental conditions represent the overall working environment, such as administration, institutional culture, and, collegial relationship. Existing evidence indicates the positive influences of contextual factors, such as institutional climate and collegiality, on Job satisfaction of university faculty (Ismayilova & Klassen, 2019). Job satisfaction of faculty seems also influenced by the institutional leadership and mentoring they receive (Bilimoria et al., 2006).

In addition to the factors reviewed previously, to address the features of international employees, other predictors relating to their foreignness, such as cultural distance and local language proficiency, have also been examined. According to Sabharwal (2011), the more diverse region the international faculty is locate in, the more job satisfaction they express. Likewise, Froese & Peltokorpi (2011) clarified the positive relationships between cultural distance, supervisor's nationality, expatriate type, and job satisfaction of expatriates. The proficiency of the local language was also viewed as an effective predictor (e.g. Sabharwal, 2011).

Applying the indicators reviewed earlier, numerous previous studies have been conducted via a comparative approach to reveal the differences in predictors of job satisfaction caused by the characteristics of faculty, such as their nationality, academic rank, and contract type. For example,

evidence suggests that due to international faculty's lower autonomy and decision-making abilities compared with their local faculty peers, they experience lower satisfaction with their works and affiliated institutions than their local faculty peers in many aspects (e.g. Mamiseishvili & Lee, 2018; Sabharwal, 2011). By addressing contract type of faculty, Antony & Valadez (2002) found that the job satisfaction of part-time faculty is largely influenced by the opportunity of teaching; whereas, full-time faculty were more concerned with research activities, and working conditions, such as job security, tenure, pay, and benefits. Similarly, Lee (2021) also addresses the differences in academics' commitment and job satisfaction.

Despite the plethora of literature on job satisfaction in other countries, the existing research investigating job satisfaction of international faculty at Japanese universities remains extremely limited. To date, Yonezawa et al., (2014) illustrate that junior international faculty and those in Humanities and Social Sciences tend to be more dissatisfied, however, without further exploration of the predictors of international faculty's job satisfaction. Additionally, even though Fujimura (2016) found that the effect of relationship with colleagues, autonomy/independence, management/government of the institution, and support for research activities on job satisfaction of international faculty, it focused only on the case of Japanese national universities. A more recent study confirmed the positive relation between international English instructors' professional opportunities and their job satisfaction at Japanese universities (Parrish & Kithae, 2021). However, other predictors and other types of international faculty have not been investigated. More importantly, given the significantly varied characteristics of diverse international faculty at Japanese universities, a more detailed investigation according to their specific characteristic and role distribution is urgently needed.

Research questions and methodology

Built on the theoretical frameworks and previous studies reviewed above, the study seeks to clarify the predictors of job satisfaction of international faculty in Japanese universities. Following the principles of existing literature that address the features of specific groups, the study attempts to explore the predictors of job satisfaction of two categories of international faculty at Japanese universities, namely the Chinese/Korean faculty and American/British faculty, due to their distinctive features of origin, demographics, and work roles (Huang, 2018a). The data of a comprehensive national survey conducted by Futao Huang from 2016 to 2017 in Japan was utilized in the study. The main research questions guide the study are as follows:

1. What are the demographic, professional, and perceptual differences between Chinese/Korean faculty and American/British faculty?

2. How do the predictors of Chinese/Korean faculty and American/British faculty's job satisfaction differ?

In order to address the main research questions, based on the most comprehensive and appropriate model for Higher education studies (Höhle & Teichler, 2013), the study addresses similar independent variables including achievement, recognition, institutional resource, salary, and Japanese proficiency (Motivators and the hygiene factors); gender, academic rank, academic discipline, contract types (Demographics); And collegiality, administration, institutional openness, and academic freedom (Environmental conditions). Since the data used in the study is not panel data that can address the changes over time, triggers factors, such as changes in academic ranks, and marital status or children were removed from the data analysis.

The dependent variable used in this study is a single-item measure of job satisfaction taken from the original survey by asking the following question: How do you rate your satisfaction with your current overall professional environment? Participants used a 5-point rating scale numbered from '1' (very low), through '3' (neutral), to '5' (very high). The scores were coded with a high mean scale score signifying high overall job satisfaction and a lower score indicating lower job satisfaction. The explanation of the variables is shown in Table 1. And Figure 1 illustrates the framework of the study.

Parameter

In terms of the definition of international faculty in this study, applying the definition in previous studies (Huang, 2018a, 2018b), we define an international faculty as a full-time employee at a Japanese university who reported his nationality as a non-Japan country and obtained his/her bachelor degree out of Japan properly. Therefore, these three criteria of the definition of international faculty eliminate the part-time employees and those who obtained their bachelor degrees in Japan even though they were foreign passports holders.

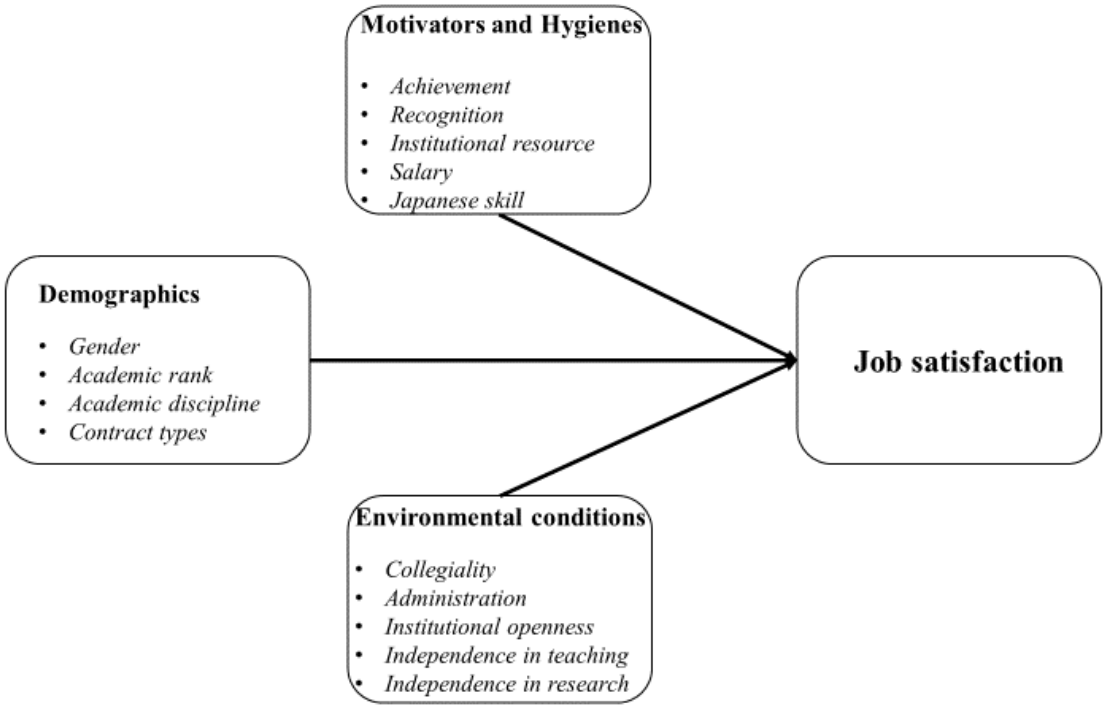
Data resource

The data used in this study is a part of a representative comprehensive national survey of international faculty working at Japanese universities in all fields, conducted by Futao Huang from 2016 to 2017. The questions concerned with their demographic information, work situation, and their consciousness of the governance and administration of affiliated institutes are included in this questionnaire. This data was sent out to 4076 international faculty, which was collected by mail. By early September 2017 altogether 1,285 valid responses were received with a valid response rate of 31.5% (Huang, 2018a).

Table 1. Variables and Measures

Explained Variables	**Items/Values**
Demographics	
Gender	Male=1, Others=0
Academic rank	
Professor	Professor=1, Other=0
Associate Professor	Associate Professor=1, Other=0
Assistant	Assistant=1, Other=0
Lecturer	Lecturer=1, Other=0
Academic discipline	
Humanities	Humanities=1, Other=0
Social sciences	Social sciences=1, Other=0
Natural sciences	Natural sciences=1, Other=0
Engineering	Engineering=1, Other=0
Contract types	Tenure=1, Other=0
Motivators and Hygiene	
Achievement	Articles published in an academic book or journal in the past three
Recognition	Japanese faculty members regard international faculty members as
Salary	Very high=5, high=4, neutral=3, low=2, very low=1
Institutional resource	My institution provides various opportunities/funding for faculty
Japanese skill	Very high=5, high=4, neutral=3, low=2, very low=1
Environmental conditions	
Collegiality	Collegiality in decision-making processes
Administration	My institution has a top-down management style
Institutional openness	The Japanese academic market is closed to international faculty
Independence in teaching	Very high=5, high=4, neutral=3, low=2, very low=1
Independence in research	Very high=5, high=4, neutral=3, low=2, very low=1
Dependent Variables	
Job satisfaction	Very high=5, high=4, neutral=3, low=2, very low=1

Figure 1. Conceptual framework investigating the predictors of international faculty's job satisfaction



Findings

The research findings of the study are provided in three main sections, comprising the descriptive analysis of Chinese/Korean faculty and American/British faculty, ANOVA analysis of their perceptions, and finally the regression analysis of the predictors of their job satisfaction. The first two sections were established primarily to provide a better understanding of the characteristics of Chinese/Korean faculty and American/British faculty respectively. The third section is concerned with the exploration of the predictors of their job satisfaction.

Descriptive analysis

The descriptive and inferential statistics of the valid respondents from Chinese/Korean faculty and American/British faculty group are shown in Table 2. Firstly, in the case of Chinese/Korean faculty, by gender, 65.3% were male and the remaining 33.7% were female. Regarding the academic ranks, the largest number of Chinese/Korean faculty was hired as a professor (41.2%), followed by associate professor (26.7%), assistant professor (22.6%), and lecture (8.4%). Regarding the distribution of international faculty by academic discipline, there was no big difference between the number of those

hired in Humanities (24.9%), Social science (28.4%), Natural science (23.3%), and Engineering (23.5%). And the data analysis shows that over half of them (67.9%) were tenured.

On the other hand, as for American/British faculty at Japanese universities, most of them were male (81.8%). The number of those hired as professors and associate professors has no significant differences, which represent 37.3% and 34.3% respectively. However, regarding their academic disciplines, the majority of them were in Humanities (59.6%) and Social science (28.7%), followed by Natural Sciences (8.6%) and Engineering (0.3%). Likewise, over half of them were tenured (66%).

In summary, although the proportion of Chinese/Korean and American/British faculty employed on a tenured contract was similar, Chinese/Korean faculty were more likely to have comparatively more female faculty and occupy senior positions of professors at Japanese universities. They were evenly distributed across the disciplines of Humanities, Social sciences, Natural sciences, and Engineering. Whereas, most American/British faculty were male and were mainly affiliated in Humanities and Social sciences with middle to high academic positions of professors and associate professors.

Table 2. Descriptive data analysis

Variables	Chinese/Korean faculty	American/British faculty
Gender		
Male	281 (65.3%)	265 (81.8%)
Female	145 (33.7%)	54 (16.7%)
Academic rank		
Professor	177 (41.2%)	121 (37.3%)
Associate Professor	115 (26.7%)	111 (34.3%)
Assistant Professor	97 (22.6%)	21 (6.5%)
Lecturer	36 (8.4%)	61 (18.8%)
Other	5 (1.2%)	10 (3.1%)
Academic discipline		
Humanities	107 (24.9%)	193 (59.6%)
Social sciences	122 (28.4%)	93 (28.7%)
Natural sciences	100 (23.3%)	28 (8.6%)
Engineering	101 (23.5%)	7 (0.3%)
Tenure		
Tenured	292 (67.9%)	214 (66%)
Non-tenured	136 (31.6%)	110 (34%)

ANOVA analysis

The second section is the analysis of the variances of international faculty's variables in the dimensions of

motivators and hygiene, and environmental conditions. It aims to provide a better understanding of Chinese/Korean and American/British faculty's perceptions of their works and affiliations respectively. As the study focus on the differences between the groups of Chinese/Korean faculty and American/British faculty, the data of the third group was removed from the presentation of the results, as demonstrated in Table 3.

The statistical analysis illustrates that except for the perceptions on institutional openness, differences can be identified between Chinese/Korean faculty and American/British faculty. As revealed in Table 3, Chinese/Korean faculty tend to produce more academic achievement (F=17.552; P< .001), and thus perceive higher collegiality (F=9.415; P< .001) than American/British faculty. In addition, their mean of recognition (F=10.583; P< .001) is statistically lower than American/British faculty, implying their lower perception of being taken as a temporary visitor at their affiliations. Moreover, a significant difference was found concerning their Japanese proficiency (F=88.156; P< .001).

In the case of American/British faculty, the data analysis suggests that they were more likely to perceive higher tangible working conditions at Japanese universities, including institutional resource (F=4.277; P< .05) and academic freedom in both teaching (F=16.927; P< .001) and research activities (F=9.178; P< .001). Surprisingly, weak evidence even shows that American/British faculty tend to rate their salary more highly (F=2.859; P< .1). As a result, they tend to express a higher job satisfaction (F=4.068; P< .01) despite their higher perception of the top-down administration of Japanese universities (F=24.788; P< .001).

Table 3. ANOVA analysis

	Mean		**F**
	Chinese/Korean faculty	**American/British faculty**	
Achievement	10.16	4.76	17.552***
Recognition	3.01	3.34	10.583***
Salary	3.1	3.34	2.859^{+}
Institutional resource	2.93	3.17	4.277*
Japanese skill	3.23	2.45	88.156***
Collegiality	3.15	2.8	9.415***
Administration	3.49	4.06	24.788***
Institutional openness	3.11	3.01	1.282
Independence in teaching	3.74	4.28	16.927***
Independence in research	4	4.35	9.178***
Job satisfaction	3.52	3.71	4.068**

Note: ***p < 0.001, **p < 0.01, *p < 0.05, $^{+}$p<0.1

Statistically, significant differences have been found between Chinese/Korean faculty and

American/British faculty. To sum up, due to the higher scientific contribution and Japanese language proficiency of Chinese/Korean faculty, they were more likely to be recognized and to get involved in the institutional management and decision-making process at Japanese universities. However, it seems that their engagement does not contribute to better perceptions of their working conditions, such as their salary, institutional resources, and academic freedom. Consequently, they tend to express a lower job satisfaction than American/British faculty. As for American/British faculty, despite their perceptual absence in university management and administration caused by their disadvantages in scientific productivity and Japanese proficiency, they were more inclined to be satisfied with their working conditions (e.g. salary, institutional resources, and academic freedom), which lead to higher job satisfaction.

Regression analysis

In the third section, the same but separate regression analysis of a comprehensive model with all of the potential factors was run to explore the predictors of international faculty's job satisfaction. The results were provided in Table 4. Firstly, the predictors of Chinese/Korean faculty's satisfaction were investigated. The model predicted 30.2% of the variance in job satisfaction for Chinese/Korean faculty, with an F value of 5.846, sig. F < .001. The data analysis indicates that compared with Chinese/Korean professors, associate professors (β = .306, p< .1) were more like to be satisfied with their overall employment at Japanese universities. In addition, we found that the general environment conditions, especially the administration (β =-.231, p< .05), independence in research (β = .193, p< .05), independence in teaching (β = .158, p< .1), and institutional openness (β = .151, p< .05), were positively correlated to the job satisfaction of Chinese/Korean faculty. This implies that the faculty members in a more autonomous and open-minded affiliation tend to have higher job satisfaction at Japanese universities. And the perceived more academic freedom in research and teaching activities were likely to express higher job satisfaction.

In the case of American/British faculty, the comprehensive regression model explained 53.1% of the variance in their job satisfaction, with an F value of 10.503, sig. F<.001. The results indicate that American/British faculty holding a tenured position (β = .609, p< .001) tend to have higher job satisfaction. Similar to Chinese/Korean faculty, a more bureaucratic institution (β =-.347, p< .001) was statistically significant and negatively related to their job satisfaction. However, different from Chinese/Korean faculty who were concerned with academic freedom in both teaching and research activities, American/British faculty's job satisfaction was only positively associated with their independence in teaching (β = .232, p< .005). In addition, the working conditions, specifically their salary (β = .238, p< .01), and institutional resource (β = .128, p< .05), were acknowledged positively impacting their job satisfaction. Moreover, their involvement into institutional decision-making process (β = .178, p< .01) contribute to a higher job satisfaction. Finally, those with higher Japanese skills (β = .142, p< .1)

Table 4. Predictors of international faculty's Job satisfaction

Job satisfaction	Chinese/Korean faculty		American/British faculty	
Control Variables	β	SE	β	SE
	1.662	0.517	1.290	0.625
Demographics				
Gender (Male Reference Group)	-0.065	0.138	-0.201	0.181
Academic rank (Professor Reference Group)				
Associate Professor	0.306^{+}	0.18	-0.143	0.167
Assistant Professor	0.153	0.228	-0.073	0.255
Lecturer	-0.15	0.245	0.268	0.204
Academic discipline (Humanities Reference Group)				
Social Sciences	0.042	0.173	-0.056	0.141
Natural sciences	0.017	0.182	-0.191	0.246
Engineering	0.219	0.175	0.322	0.484
Contract types	-0.159	0.144	0.609***	0.168
Motivators and Hygiene				
Achievement	0.001	0.003	-0.005	0.012
Recognition	0.089	0.070	0.013	0.074
Salary	0.163*	0.064	0.238**	0.067
Institutional resource	0.002	0.071	0.128*	0.059
Japanese skill	-0.053	0.082	0.142^{+}	0.074
Environmental conditions				
Collegiality	0.045	0.071	0.178**	0.077
Administration	-0.231*	0.112	-0.347***	0.097
Institutional openness	0.151*	0.065	-0.070	0.069
Independence in teaching	0.158^{+}	0.081	0.232*	0.102
Independence in research	0.193*	0.084	-0.061	0.110
R^2	0.364		0.587	
ΔR^2	0.302		0.531	
ΔF	5.846***		10.503***	

Note: ***p < 0.001, **p < 0.01, *p < 0.05, $^{+}$p<0.1

tend to express higher job satisfaction.

In summary, except for their academic rank of being an associate professor, which was shown by weak evidence, the main predictors of Chinese/Korean faculty's job satisfaction were from environmental conditions, including university administration, academic freedom, and institutional openness. Whereas, for American/British faculty, despite the similarities with Chinese/Korean faculty

concerning the predictors in environmental conditions, such as university administration, the significant influence from their contract types and their perceptions on salary cannot be underestimated. Their concern with independence in teaching and Japanese skills was also statistically acknowledged.

Conclusion and discussion

Given the rapid growth in the number of international faculty at Japanese universities and the close linkage between job satisfaction and retention, the study was the first attempt to explore the predictors of job satisfaction of Chinese/Korean faculty and American/British faculty at Japanese universities based on a comprehensive data of a national survey in Japan. The data analysis investigates the differences in their demographics, profession, perceptions, and the predictors of their Job satisfaction at Japanese universities. The key findings yielded from the study were summarized and discussed subsequently.

Firstly, regarding the demographic and professional differences between Chinese/Korean faculty and American/British faculty, the research findings indicate that Chinese/Korean faculty tend to be evenly distributed across all the disciplines with senior positions of professors. They were also more likely to have higher scientific achievement and Japanese language proficiency, contributing to their better recognition and engagement at Japanese universities. Whereas, American/British faculty were mainly hired in Humanities and Social sciences at mid to high positions of both associate professor and professor. They tend to have comparatively lower Japanese proficiency and scientific achievement, leading to their perceived lower recognition and participation at Japanese universities, echoing existing evidence (Horta & Yonezawa, 2013; Huang, 2018a). This is possibly because Chinese/Korean faculty tend to have a similar cultural background with Japanese faculty and to be educated at Japanese universities (Huang, 2018a), informing their domestic knowledge, including both Japanese language proficiency and local culture. In addition, their main orientation in research activities (Huang, 2018a) helps to improve their scientific visibility. Consequently, their professional advantages and cultural knowledge contribute to their higher academic position and engagement at their affiliations. Comparatively, the cultural distance between American/British faculty and Japanese faculty, and the fact that few of them have obtained their educational degrees at Japanese universities (Huang, 2018a), has led to their relatively low level of Japanese language skills. In addition, many of them were hired as solely a language teacher at Japanese universities with massive teaching workloads, which restrict their professional development significantly. There is no doubt that these disadvantages make it difficult for them to be well scientifically recognized and integrated at Japanese universities.

Given the acknowledged demographic and professional background, however, surprisingly, the study suggests that compared with Chinese/Korean faculty, American/British faculty tend to perceive better working conditions at Japanese universities, including salary, institutional resources, and academic

freedom in teaching and research activities, and express higher job satisfaction. This can probably be attributed to the fact that the majority of American/British faculty were engaged in language teaching, who tend to recognize their disadvantages in professional development at Japanese universities, and thus were more likely to be satisfied with their positions and current life in Japan (Yonezawa et al., 2014). Alternatively, another explanation may be that many Chinese/Korean faculty were from national/public universities, where academic competition is increasing while management expenses grants are decreasing every year. With the lack of research funding and the enormous academic pressure, it is inevitable for Chinese/Korean faculty to express lower satisfaction with their positions and the working conditions at Japanese universities.

As for the factors predicting Job satisfaction at Japanese universities, the data analysis suggests that Chinese/Korean faculty's job satisfaction was more inclined to be influenced by the intangible factors from the environmental conditions of their affiliations, such as university administration, institutional openness, and academic freedom in research activities. This is probably because as a research-oriented faculty, they were more concerned about the possibilities of their career development, which is largely impacted by the host environment, including its openness and research freedom of their affiliated universities. Whereas, the job satisfaction of American/British faculty was found to be predicted by various factors, including both intangible factors, such as their participation in university management and independence in teaching, and tangible factors, such as their contract type, salary, and institutional resource. This is probably because American/British faculty were confined in an extremely disadvantageous situation at Japanese universities. Therefore, in addition to the similar predictors to Chinese/Korean faculty, influencing their professional development, they were also concerned about more critical issues of their staying in Japan. Thus, the tangible factors such as the stability of positions, independence in teaching, and the amount of salary and funding, were also found to significantly impact their job satisfaction. Regarding the implications of the study, given the lack of existing evidence, the key findings from the study shed light on the factors predicting the job satisfaction of international faculty, especially in the context of Japanese universities, contributing to the current literature in this regard. In addition, since the organizational culture of Japanese universities, such as its administration and openness, plays a profound role in influencing the job satisfaction of both Chinese/Korean and American/British faculty, more efforts from the Japanese government, HEIs, and local faculty members to develop a more open organizational environment that international faculty can be well engaged should be suggested. Moreover, the study found that international faculty's job satisfaction tends to be influenced by different factors depending on their demographic backgrounds, a more tailored and flexible support system by Japanese universities is needed.

Regarding the implications of the study, given the lack of existing evidence, the key findings from the study shed light on the factors predicting the job satisfaction of international faculty, especially in the context of Japanese universities, contributing to the current literature in this regard. In addition,

since organizational culture of Japanese universities, such as its administration and openness, plays a profound role in influencing the job satisfaction both Chinese/Korean and American/British faculty, more efforts from the Japanese government, HEIs and local faculty members to develop a more open organizational environment that international faculty can be well engaged should be suggested. Moreover, the study found that international faculty's job satisfaction tends to be influenced by different factors depending on their demographic backgrounds, a more tailored and flexible support system by Japanese universities is needed.

There are also some limitations of the study. Firstly, constraints from the grouping method must be acknowledged. The study investigates the differences in predictors of international faculty's job satisfaction drawing on their nationality and role construction at Japanese universities. Future studies are needed to confirm the properness of using this grouping method. Then, it is notable that this grouping method limits the depth of understanding and diversity of international faculty in Japanese universities. The international faculty differ from one another with numerous characteristics, including educational and social-cultural background. All of these variations result in a different experience in their cross-cultural adjustment in Japan, leading to differences in their job satisfaction. However, a more micro examination of these features of international faculty were neglected in this study. Moreover, satisfaction is a subjective variable (Freeman, 1977), which may be measured differently according to the individuals. However, the study only applied a quantitative approach to explore international faculty's job satisfaction. To better capture the degree of their job satisfaction and discover the factors that are covered by the tangible variables of international faculty, a combination with qualitative approach is suggested.

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