How do international student returnees contribute to the development of their home countries? A systematic mapping and thematic synthesis

Zhe Wang [a], Natalya Hanley [a], Joonghyun Kwak [a], Ilka Vari-Lavoisier [a], Mira Al Hussein [b], Lorena Sanchez Tyson [c], Ahmad Akkad [a], Maia Chankseliani [a],*

[a] *University of Oxford, 15 Norham Gardens, Oxford OX26PY, United Kingdom*
[b] *University of Edinburgh, United Kingdom*
[c] *University of Hertfordshire, United Kingdom*

ARTICLE INFO

ABSTRACT

This study investigates the significant yet under-examined role of international student returnees in catalysing societal development in their home countries. Through systematic mapping and thematic synthesis of 53 articles selected from an initial pool of 1515, this review delineates the literature's portrayal of returnees' impacts across various domains, including firm growth, industrial innovation, higher education, research, social diversity, equity, inclusion, democracy, and civic engagement. While highlighting the skills, knowledge, and resilience students garner abroad—facilitating innovative problem-solving and engagement in their countries—the study concurrently points out the emerging nature and methodological limitations of the extant literature. This review identifies critical gaps in the literature on international student returnees. It notes a lack of global evidence and an overemphasis on certain geographical contexts which questions the generalisability of the findings. Furthermore, there is a narrow focus on economic and political impacts, overlooking crucial areas like poverty reduction and environmental sustainability. Equally important is the absence of comparative studies between returnees and local counterparts. This lack of comparative studies highlights the need to distinguish the unique effects of international versus domestic higher education. This review not only advances academic understanding by systematically mapping the underexplored nexus between international student mobility and societal development but also offers implications for policy. By delineating the transformative potential of returnees and highlighting the importance of conducive environments, it underscores the necessity of informed, strategic interventions to maximise returnees' societal contributions. In doing so, the study acknowledges existing gaps and methodological limitations within the literature, advocating for a more nuanced and evidence-based approach to leveraging international education for sustainable development.

1. Introduction

A body of research has explored the nexus between the societal development and the role of domestic higher education (Boccanfuso

---

* Corresponding author.
  E-mail address: maia.chankseliani@education.ox.ac.uk (M. Chankseliani).

et al., 2015; Donoso et al., 2023; Gyimah-Brempong et al., 2006; Somani, 2021). However, a noticeable research gap persists concerning the broader societal ramifications of international higher education, specifically with respect to students' home countries. The literature on international higher education mostly centres on the personal (trans)formation of international students, encompassing aspects such as the acquisition of diverse skills, forms of capital, civic awareness, and intercultural comprehension (Chieffo & Griffiths, 2004; Chiocca, 2021; Gümüş et al., 2020; Oldac, 2021; Waters & Brooks, 2021). Limited scholarly attention has been given to exploring the far-reaching impact of international education beyond its effects on individual students.

In his book *Thinking Politics* (1994), Jeffrey Puryear illuminated the key role assumed by foreign-educated individuals in Chile's transition from authoritarianism to democracy (Puryear, 1994). Puryear referred to these individuals as intellectuals, emphasising their capacity to introduce new ideologies and critical perspectives to their surroundings. Predominantly consisting of social scientists who pursued advanced education in the United States and Europe, these intellectuals, according to Puryear, made instrumental contributions to the revitalisation of civil society—a precursor to the democratic transition. Extending these insights, Spilimbergo (2009) conducted an extensive study, analysing data encompassing almost all host and sending countries over a 50-year period. The results consistently demonstrated that foreign-educated individuals promote democratic values in their home countries, particularly when they received their education in democratic contexts. Similarly, in a study focused on the post-Soviet context, Chankseliani (2018) examined the relationship between student mobility and levels of democratic development. The research revealed that countries with a higher proportion of students studying in Europe or the United States attained higher levels of democracy, while those with a greater concentration of students in authoritarian destinations such as Russia experienced significantly lower levels of democratic development. These studies provide essential preliminary evidence suggesting that international student mobility's impact extends beyond the individual student, exerting influence on broader democratic development in their home countries.

This review is the first of its kind to addresses the following research question: how do international student returnees contribute to the development of their home countries? It is the first to comprehensively map and synthesize existing literature on how international students, as potential cross-border agents reintegrate knowledge, networks, values and contribute to positive societal changes upon their return to their home country.[1] The methodology of systematic literature review, used by researchers, practitioners, and policymakers (Gough et al., 2017; Petticrew & Roberts, 2008; Popay et al., 2006), serves to systematically map and summarise existing knowledge based on predefined criteria. Complementing this, thematic synthesis enables the amalgamation of evidence from the literature to address our distinct research question. This review not only synthesizes findings from diverse contexts but also lays the groundwork for an emerging area of enquiry linking international student mobility with societal development. By doing so, it opens new avenues for future research to build upon and expand our understanding of the societal implications of international student mobility.

2. Method

2.1. Literature search strategy

This review sought to analyse publications that examine international student returnees' contributions to positive societal changes in students' home countries. International student returnees refer to individuals who crossed international borders to engage in educational pursuits in a foreign country. These individuals subsequently returned to their country of origin, either immediately upon completing their studies or after a period of employment in the destination country or a third country (UNESCO, n.d.).[2] The key search terms covered the concepts of international student returnees, contributions, and societal changes. A summary of the search terms is presented in Table 1.

The systematic review included journal articles and reviews (both referred to as 'articles' in this paper) published over the period of 1960 to 2022. Since the 1960s, international funding for higher education, especially for international student mobility, has substantially increased (Chankseliani, 2022a; Hydén, 2017); the United States and the Soviet Union were at the forefront of making investments in promoting international student mobility (Chankseliani, 2022b). Incorporating publications from the early days of international student mobility literature, the review aimed to provide a comprehensive and systematic overview of the available evidence.

The research team conducted searches of social science and humanities literature in two main databases - Scopus and Web of Science (WoS). Search strings were developed based on the search terms presented in Table 1. A full breakdown of the search terms used for the title, abstract, and keyword searches is provided in Appendix 1. The searches were completed on July 28, 2022, and there were 882 articles found in WoS and 639 articles in Scopus. Due to the design of search strings and the differing search logics between WoS and Scopus, the results from the two datasets yielded distinct outcomes. All articles were transferred to the reference management

---

[1] Upon completing their education abroad, internationally mobile students may contribute to the development of their home countries as part of the diaspora, an area that has attracted significant research attention (Boly et al., 2014; Clemens et al., 2014; Licuanan et al., 2015). Studying in foreign countries often constitutes a pivotal step in graduate migration to host nations, ultimately leading them to become members of diaspora groups (Dreher & Poutvaara, 2011; Paul, 2017). This paper does not focus on diaspora contributions; it examines the literature that investigates the societal impacts made by returnees only.

[2] It should be noted that international student returnees' may re-migrate to leave home countries again (B. Wang, 2020). This study uses the term 'international students returnees' to emphasise its research interests in international students who are in their home countries when contributing to societal development.

Table 1
Literature search terms.

Search concept	Search term
international student returnees	international OR transnational OR overseas OR abroad OR global OR foreign OR "cross border"
	AND
	student* OR graduat* OR alumn* OR postgraduat* OR universit* OR study* OR learn* OR educat* OR program* OR Learner* OR undergraduate*
	AND
	mobilit* OR returnee* OR "returning home" OR "going back" OR travel* OR migra* OR immigra* OR flow* OR outflow OR inflow OR experienc*
contribute	development* OR impact* OR chang* OR transform* OR reconstruct* OR influenc* OR innovat* OR grow*
societal changes	social* OR societ* OR politic* OR health OR poverty OR education OR economic OR gender OR LGBT* OR "human rights" OR democra* OR freedom* OR inclus* OR just* OR equal* OR equit* OR sustainabl* OR wellbeing OR "rule of law"

software Zotero. The resulting 1521 article records were imported into the article screening software Covidence and six duplicates were removed, leaving a total of 1515.

2.2. Screening

The article selection process involved two rounds: title and abstract screening, and full-text review. Both were performed in Covidence. Fig. 1 shows the process flow. During the first round, two reviewers screened 1515 articles by title and abstract, and 96 were selected for full-text review. In addition, 250 articles were identified through screening the bibliography of the selected full-text articles. These 250 articles underwent abstract and title screening in Covidence, and 44 were selected for full-text review. Therefore, a total of 140 articles were reviewed in full text.

The full-text review was conducted using pre-determined exclusion criteria. First, the selected papers had to be directly relevant to the research question. This meant that articles which focused exclusively on the impact of international student mobility on the individual were excluded. Additionally, the following two categories of publications were excluded: articles published in languages other than English; non-peer-reviewed articles, such as conference papers, books, and book chapters. As a result of the full-text review, 57 articles out of 140 were included in the systematic literature review.

The second round of the article selection involved a critical assessment of rigour. This process involved examining various aspects of 57 articles to determine their overall quality, including their significance, subject matter, originality, clarity, credibility, confirmability, reflexivity, and ethics (Guba, 1981; Ryan, 2005; Stenfors et al., 2020). The significance of each article was assessed by evaluating whether it adequately contributed to the area of enquiry. The originality criterion involved evaluating the originality of the research in relation to existing research, including the approach used, the techniques applied, the theoretical or conceptual framework utilised, and the use of evidence. Clarity was assessed based on whether the article had a title that clearly and directly corresponded with the topic and findings of the paper; a clear and informative abstract; a coherent and transparent presentation throughout; a logical organisation and structure; a concise and focused introduction that clearly articulates the purpose of the study, providing a conceptual rationale for the research; well-defined research questions or hypotheses that guide the investigation; readability (in terms of language standards); and an appropriate length. The credibility of the research was evaluated by examining the articles' engagement with theory/prior research (work that is empirically and/or methodologically related, full but non-redundant references); the clear description of data; and the trustworthiness of the findings, as well as the appropriateness and quality of the analysis and whether alternative interpretations were considered. Confirmability was assessed based on whether there was a clear link or relationship between the data and the findings, conclusions, and claims supported by the data. Reflexivity entails assessing the analysis, critical examination of findings, their implications and significance, limitations, and future research possibilities. This criterion required careful evaluation of the research strengths and limitations and sufficient attention to the implications of the results. Finally, the ethics criterion required that the writing be non-discriminatory, that ethical issues be explicitly stated, and that the research adhered to appropriate ethical guidelines. As a result of the critical assessment, four articles were excluded from the review. Thus, the remaining 53 articles were considered sufficiently rigorous to be included in this review (see Appendix 2 for the full list of articles included).

In both rounds of screening, conflicts were resolved either by a third reviewer or through a discussion between the two reviewers with conflicting results.

2.3. Data extraction, systematic mapping, and thematic synthesis

Two reviewers independently extracted data from each article. This included article information (author, article title, author affiliation countries, publication year, and journal title), empirical characteristics (including participants' home and host countries or regions, sampling approach/size, data analysis methods, employed theories, and results). Any conflicts between the reviewers were resolved through discussion. All the collected information was kept in Covidence, which allows for export and additional analysis (see Appendix 2 for a simplified version of the extraction sheet).

Using the extracted data, the research team conducted a systematic mapping of the literature growth trajectory and geographic distribution of the scholarship. The research team summarised the data on the key regions and countries involved in international student mobilities, as well as the data used by the articles to examine student returnees' contributions. The team identified the key
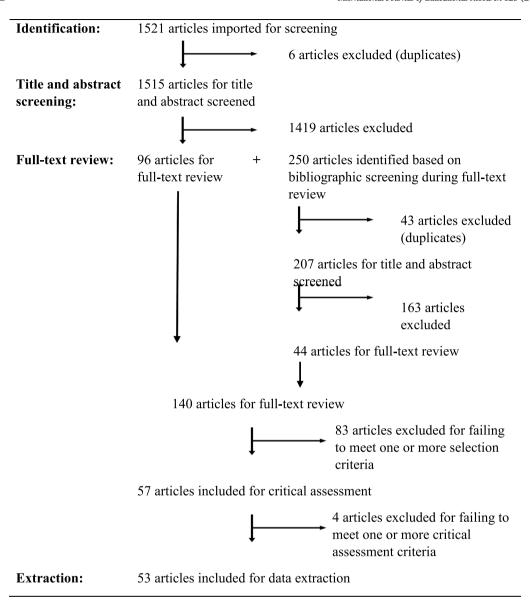
Identification: 1521 articles imported for screening

                                        → 6 articles excluded (duplicates)

Title and abstract   1515 articles for title
screening: and abstract screened

                                        → 1419 articles excluded

Full-text review: 96 articles for   +   250 articles identified based on
                                full-text review   bibliographic screening during full-text
                                                                        review

                                                                        → 43 articles excluded
                                                                            (duplicates)

                                                                207 articles for title and abstract
                                                                screened

                                                                        → 163 articles
                                                                            excluded

                                                                44 articles for full-text review

                                140 articles for full-text review

                                        → 83 articles excluded for failing
                                            to meet one or more selection
                                            criteria

                                57 articles included for critical assessment

                                        → 4 articles excluded for failing to
                                            meet one or more critical
                                            assessment criteria

Extraction: 53 articles included for data extraction

Fig. 1. Details of the screening process.

areas of positive societal changes covered in the included articles, providing insights into the thematic scope of the existing research.

The second phase of the analysis involved a thematic synthesis that sought to establish the relationship between international higher education, students' return mobilities, and the development of their home countries. Thematic synthesis is an approach used to synthesise both qualitative and quantitative research to address research questions (Harden et al., 2006; Snilstveit et al., 2012; Thomas et al., 2007). It helps to uncover the interconnectedness of findings presented, identifying patterns, and discerning any gaps or inconsistencies in the literature (Mays et al., 2005; Snilstveit et al., 2012; Thomas & Harden, 2008). The synthesis of findings is normally organised around key themes or concepts to address the research question. It involves coding and reinterpreting concepts from one study to another, ensuring the consistency of interpretation. By utilising the themes extracted from the literature review, the reviewer goes beyond the individual article findings, and integrates them to reflect on their implications for the research question.

As part of the thematic synthesis, the team first identified and coded descriptive themes. These themes were further synthesised by considering their connection to the research question, resulting in the development of analytical themes. Appendix 3 displays the article numbers, coding, descriptive themes, and analytical themes for all the included articles. This approach grounded the analysis in the data, as the themes were developed through a rigorous and transparent method. At the same time, the process of synthesising the themes is highly dependent on the judgment and insights of the reviewers. Therefore, all reviewers engaged in iterative sharing of interpretations within the research team. The emphasis was on the narrative data and the interpretation of the themes rather than on the number of articles coded against each descriptive theme, following the approach described in Thomas & Harden (2008). As this

method prioritises themes related to the research question rather than the volume of evidence when synthesising research findings, this approach can sometimes result in one theme appearing more than others, but that doesn't indicate more compelling evidence (Nunan et al., 2021). Given that the research team has undertaken advanced research methods training and had prior experience in literature reviews, the validity and reliability of the findings are ensured through the reviewers' meticulous evaluation of the quality and relevance of the identified themes.

3. Results of systematic mapping

3.1. Publication trends

The literature on international student returnees and their contributions to their home countries has grown since the year 2000, as shown in Fig. 2. Prior to 2000, only two papers were published on this topic, both authored by individuals working in governmental organisations, Fulbright (1976) and Selvaratnam (1985). However, there has been a surge in publications since 2008, which is consistent with the growing research interests in international student mobility (Gümüş et al., 2020).

3.2. Geographic distribution of the scholarship

The three countries that the most research originated from are the United States (32.7 %), China (28.8 %), and the United Kingdom (19.2 %) (Fig. 3). Researchers from Australia, the Netherlands, South Korea, and Taiwan have published at least two articles included in the review. Finally, there was one article each authored by those based in Belgium, Czech Republic, Germany, Hong Kong, Kazakhstan, Kyrgyzstan, the Philippines, Singapore, Vietnam, and a joint affiliation in Italy and Belgium.

More than half (56 %) of the articles were authored by researchers from English-speaking countries such as the US, UK, and Australia. This could be due to these countries hosting a large number of international students over the years (UNESCO, 2023). Another likely reason for the overrepresentation of authors from English-speaking countries in the review is that the review included articles written only in English. The relatively high number of articles related to the Chinese context is arguably due to international Chinese students being one of largest groups of international students in recent years (UNESCO, 2023), and the Chinese government's interest in this area (Pan, 2011), as evidenced by 11 of 20 papers authored by Chinese scholars funded by the Chinese government.

3.3. Countries of origin and destination of international student returnees

A total of 26 home countries and 74 host countries were examined in the literature. The top country of origin was China, with 22 out of 53 articles focusing solely on student returnees to China. Four articles focused on Ghanaian student returnees, and three articles each on student returnees in Georgia, Kenya, Moldova, and Taiwan. Regarding host countries, the United States stood out as the top destination, with 21 articles focusing on it. The United Kingdom was as the second top host country, featured in 11 articles, followed by the Netherlands with 9 articles. These reflect the scholarship's geographic distribution mentioned in the previous subsection. Nine articles in the study focused on the Netherlands as a host country (see details in Appendix 2). Many qualitative articles used terms such as 'overseas', 'abroad', 'Asian', and 'European' to refer to the countries/regions where students studied, and the phrase 'unspecified foreign countries' was used for articles lacking a specific country focus. For instance, Selvaratnam (1985) emphasised the UK as the
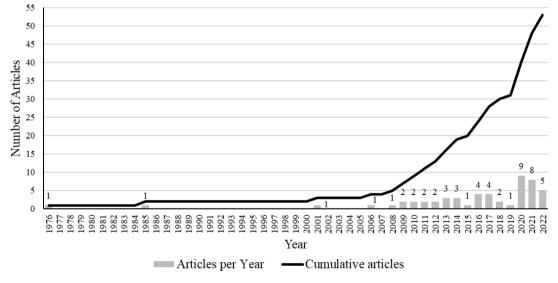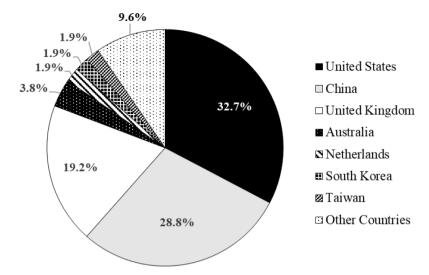

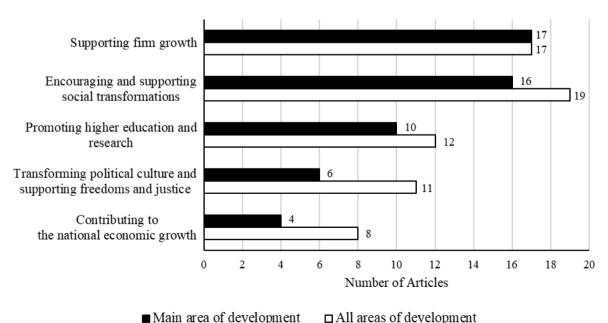**Fig. 2.** Publication trends of 53 articles.

Fig. 3. Geographic distribution of authorship across 53 articles by 104 authors.
Note: The number of authors is in parentheses. Other countries include the following 10 countries: Belgium, Czech Republic, Germany, Hong Kong, Kazakhstan, Kyrgyzstan, the Philippines, Singapore, Vietnam, and a joint affiliation in Italy and Belgium.

'host country' and 'developing countries' as the home countries; some papers with specific home countries (such as China) used regions to refer to students' study destinations, such as 'Western countries' and 'developed countries.' Although the use of ambiguous geographical terms may limit the understanding of the flows of student mobilities, it still highlights the general trends for students to study in countries which are more affluent than their home countries.

3.4. Key areas of societal changes

Student returnees contribute to their home countries in the following five key areas which are listed and defined below:

Supporting firm growth - firm growth encompasses various aspects such as increased firm size, revenue, market share, profitability and implementation of new industrial technology or products over time.

Fig. 4. Primary and secondary foci on areas of societal changes.
Note: some papers address more than one area

Encouraging and supporting social transformations - social transformations involves fostering inclusive societies that value diversity, fairness, and equal opportunities for all, and enhance the well-being of people.

Promoting higher education and research - higher education and research capability are interdependent, as higher education institutions aim to educate students and undertake research.

Transforming political culture and supporting freedoms and justice - transforming political culture refers to nurturing a culture that supports freedom and justice for all individual, prioritising transparency, accountability, and participation of political institutions, that form the basis of political systems.

Contributing to the national economic growth - national economic growth pertains to the expansion of a country's production and consumption of goods and services over time.

The articles were coded based on the primary and secondary focus on an area of societal changes. Out of the 53 included articles, 12 examined more than one area. As seen on Fig. 4, firm growth emerged as the leading area. Out of the 17 articles in the area of firm growth, the Chinese context dominated the majority of research focus, with 15 articles specifically examining Chinese firm growth. Ten of these articles used quantitative data on Chinese firms. On the other hand, 16 articles with a primary focus on exploring social transformations consisted of 15 qualitative case studies from various countries and one mixed-method article.

Social transformation was a prominent secondary focus of the largest number (19) of articles (Fig. 4). As shown in the Appendix 2, articles focusing on the areas of social transformations, higher education and research advancement, and the transformations of political culture usually investigated at least one of the other two areas. Although only six papers focused on the transformations of political culture as the main question, the included articles provided robust evidence to demonstrate the link between international student mobilities and the democratic level of students' home countries. Economic growth also attracted research attention, but there was a relatively limited evidence demonstrating the contributions of returnees to national economic growth. Section 4.1 provides a detailed analysis of each area of impact of international student returnees on the societal changes of their home countries. Given that most of the papers on economic growth emphasise returnees as human capital contributing to firm growth and industry upgrading, the explanation of returnees' contribution to economic growth is incorporated within the discussion of their promotion of firm growth in Section 4.1.

4. Results of thematic synthesis: how international student returnees contribute to the development of their home countries

The following three analytical themes were identified regarding the contributions of international student returnees to the development of their home countries:

Analytical theme 1. Returnees contribute to firm growth, social development, higher education and research development, and the development of political culture;

Analytical theme 2. International higher education supports the (trans)formation of students' knowledge and skills, social capital, social values, democratic values, intercultural understanding, and environmental awareness;

Analytical theme 3. Contextual and individual factors influence how returnees contribute to the development of their home countries.

4.1. Returnees' contributions to key areas of development

This subsection elaborates on the four key areas where international student returnees contribute to societal changes in their home countries, as identified through thematic synthesis. Specifically, this subsection utilises evidence from the literature to demonstrate how international student returnees have a positive influence on firm growth, industrial advancement, the enhancement of higher education and research capacity, social transformations, and changes in political culture within their home countries. However, despite the thematic synthesis results suggesting such societal changes, this subsection further clarifies how these changes observed by the literature don't necessarily equate to evidence supporting the link between international higher education and development in students' home countries.

4.1.1. Firm growth and economic growth

The literature highlights the role of international student returnees in contributing to firm growth in their respective home countries. This is notably prominent in the case of China, where 14 of the 17 articles are focused. Returnees were found to influence firm growth in two main ways: by elevating domestic firms' innovation capability and management standards, and by fostering international investments and business opportunities. Furthermore, the literature indicates that the contributions of returnees extend beyond their own firms, generating positive effects on other businesses and stimulating broader industrial expansion.

Returnees have been found to impact domestic firms' innovation capability, propelling technological advancements within these firms (Hao et al., 2019; Lan et al., 2022; Lin et al., 2014; Luo et al., 2017; Si et al., 2021). Four articles suggest that returnees have played a role in introducing cutting-edge technologies to domestic firms, which in turn increased firms' capacity to absorb and utilise innovative technologies and bolster their research and development capability (Guo et al., 2021; Kenney et al., 2013; Liu et al., 2010; Si et al., 2021). For instance, Liu et al. (2010) conducted panel data analysis on a distinct sample of 1318 high-tech firms, which

represented the entire population of firms located in Beijing's Zhongguancun Science Park (ZSP). Their study revealed a positive impact on the innovation capability of these firms attributed to the presence of returnee entrepreneurs. Similarly, Si et al. (2021) conducted a study on Chinese enterprises operating in the information and communication technology (ICT) industry in Shanghai's Zhangjiang High-Tech Park. Their results show that returnees had positive mediating effects on their firms' gains of external knowledge. Such examples underscore the significance of returnees in transferring technology to their home countries.

Returnees are also believed to bring business management expertise to their home countries, resulting in more efficient and knowledgeable firm management. By leveraging their overseas-acquired knowledge, returnees have helped to shape domestic firms' management operations, improve the firms' business processes, and secure a competitive advantage for their firms (H. Wang et al., 2011). There is evidence that Kazakhstani returnees contributed to transforming local companies into more efficient organisations compared to those under the former Soviet system (Perna & Jumakulov, 2015). In some instances, returnees played a leading role in enhancing a company's human resource management by recruiting employees and offering training to entrepreneurs, thus nurturing well-managed businesses (Dahles, 2013; Wang et al., 2011). Returnee executives' commitment to social responsibility also contributed to stabilising a firm's stock price, as evidenced in the Chinese context (Gao et al., 2022).

Other articles suggest that returnees contribute to a company's growth by facilitating international investments and business opportunities. The literature offers evidence that Chinese entrepreneurs helped to secure financial resources for firms' growth and expansion by attracting foreign venture capital and foreign direct investments (Wang et al., 2011; Fu et al., 2017). For example, according to Wang et al. (2011), Zhang Fan, a returnee from the US made significant contributions to China's business landscape. He facilitated a $800,000 investment in Kongzhong Net (Chinese firm), which achieved the fastest NASDAQ listing for a Chinese firm. Zhang also played a key role in a $12.5 million investment in Focus Media, the first Chinese media firm listing abroad on NASDAQ. Like Zhang Fan, other returnees mentioned in the article also helped drive the firm growth through strategic investments, showcasing their impacts on China's entrepreneurial success. They also encouraged firms' engagement in global markets, helping to increase exports by selling domestic products to the international market and assisting in listing domestic firms overseas, thus expanding their global presence (Wang et al., 2011; Wei et al., 2017). With their international education and experience, returnees worked efficiently with international companies, securing contracts and licenses for local production of international products (Perna & Jumakulov, 2015). Returnees also led outbound business merger and acquisition activities, connecting firms to the global market and fostering international collaboration (Wang et al., 2011). Such evidence indicates that by increasing a company's international orientation and strengthening the firms' global connections, returnees play a crucial role in the firms' expansion.

For instance, Chinese returnees were found to promote technology spillovers to other local firms, particularly for local Chinese companies with a low technology gap in the same industry (Wei et al., 2017), which had lasting positive effects on the industry (Liu et al., 2010; Luo et al., 2017). Similarly, Saxenian (2001) noted that US-educated Taiwanese engineers have effectively coordinated a decentralised process of reciprocal industrial upgrading. They accomplished this by transferring skills and knowledge to Taiwan and facilitating collaborations between specialist producers in Silicon Valley, California, and the Hsinchu-Taipei region of Taiwan. Therefore, returnees' expertise contributed to the dissemination of technological know-how within local industries, creating a collaborative environment to help drive the overall technological advancement of the sector where they work, and ultimately spur innovation and progress throughout the industry (Chen, 2008; Kenney et al., 2013; Luo et al., 2017; Saxenian & Hsu, 2001).

Returnees' contribution to firm growth and industrial expansion could serve as examples of how returnees contribute to home countries' economic growth, as believed by some included articles (Rasamoelison et al., 2021; Pan, 2011; Perna et al., 2015). For example, Pan (2011) and Perna et al. (2015) regard returnees as human capital that contributed to the economic progress of their home countries by fostering the growth of local firms and facilitating the upgrading of industries in the contexts of China and Kazakhstan. Rasamoelison et al.'s article further provides evidence of international studnets' contribution to home countries' economic development (Rasamoelison et al., 2021). Rasamoelison et al. (2021) employ region fixed-effects and instrumental-variables estimators to address potential endogeneity concerns related to student-migrant flows. Their study reveals significant and positive effects of student migration on per capita GDP in sending countries. These findings, observed consistently across various time lags and exhibiting an increasing trend over time, indicate that student migrants play a modest yet meaningful role in contributing to short-term economic development in their respective home countries.

4.1.2. Social transformations

While firm growth is predominantly illustrated in the context of China, the articles on social transformations highlight other regions, showcasing examples of how returnees contribute to the advancement of inclusive and equitable societies.

First, international student returnees work towards fostering equality and inclusion in their home countries like Georgia, Moldova, Ghana, Nigeria, Bulgaria, Kyrgyzstan and Afghanistan. Specifically, qualitative case studies have shown that returnees engaged with various social issues, such as gender equality, disability rights, and the needs of other marginalised groups in those countries (Campbell, 2020; Campbell et al., 2021; Campbell et al., 2021; Glorius, 2021; Jailobaeva & Baialieva, 2020; Jon & Fry, 2021; van Houte, 2014). Through interviewing returnees in Ghana and Nigeria who had studied in the US, researchers found that they pursued social justice in government positions, and some of them even established NGOs focusing on women's rights (Campbell et al., 2021). Returnees also promoted disability rights; they worked in government positions and created NGOs that focused on this issue, as seen in the case of returnees from Ghana (Campbell et al., 2021). Georgian returnees contributed to government-led projects that offer services for children with disabilities (Campbell & Baxter, 2019).

In addition to advocating for gender equality and disability rights, returnees worked to help other marginalised groups in some countries. For example, some returnees helped landmine victims in Cambodia (Dahles, 2013), provided group homes and helped adjudicated or troubled youth, the homeless, and those with mental illness in United States (Jon & Fry, 2021). One Georgian returnee

took on the task of implementing a nationwide foster care program and subsequently shut down large orphanages that were operating in unsanitary conditions (Campbell, 2017). To promote social equality and inclusion in their home countries, returnees worked in both governmental institutions and non-governmental organisations, advising on policies and government programs, designing policies for marginalised populations, and organising trainings in countries such as Georgia, Ghana, and Nigeria (Campbell, 2016; Campbell et al., 2021; Campbell & Lavallee, 2020). Considered as the cornerstone of social development, student returnees advocated for inclusive education, encouraged women and girls to pursue to technical, vocational, and tertiary education, and taught youth and other marginalised populations in communities (Abimbola et al., 2016; Campbell et al., 2021; Jamison & Madden, 2021).

Qualitative case studies also illustrated how returnees engaged in activities that benefited the common good, such as improving healthcare, promoting peace-building and rural development. They collaborated with local health authorities to develop strategies and action plans to combat various health issues (Abimbola et al., 2016; Glorius, 2021; North et al., 2022). An East African student returnee worked closely with the Ministry of Health in her home country to develop strategy papers, which ultimately enabled the Ministry to make more focused and guided contributions to their local community (North et al., 2022). Another remarkable example a returnee scholar in Uganda who served as the team leader for a program focused on preventing mother-to-child transmission of HIV. Working alongside her team, she successfully trained over 2000 health workers across 80 districts on a new treatment regimen (Abimbola et al., 2016). Additionally, in Mozambique, a returnee in charge of environmental health introduced 113 regulations for water and sanitation, which included ensuring food safety; another returnee led interventions that greatly reduced the volume of tuberculosis (TB) patients and increased the chances of patients being cured during the national emergency of TB in Mozambique in 2005 (Abimbola et al., 2016).

Peace-building is another area where returnees make significant contributions. Returnees in Afghanistan, for instance, used their European higher education and working experience to build peace by working for NGOs (van Houte, 2014). Ghanaian returnees educated individuals about elections and the role of peacekeeping during such events (Campbell et al., 2021). Finally, returnees contributed to rural development by working in government positions or establishing NGOs that focus on this area. Returnees from Ghana and Nigeria were involved in rural development projects, while others volunteered and donated funds to various developmental projects in rural communities (Campbell et al., 2021).

4.1.3. Higher education and research capacity enhancement

In addition to their efforts to promote social transformations through general education, returnees were also found by the literature to bring changes to research capacity and higher education in their home countries. International student returnees brought a wealth of knowledge and experience that improved research capacity, knowledge transfer to university students, and contributed to the overall development of higher education systems.

Case studies have shown how returnees enhanced research capacity in their home countries through various avenues. In China and some African countries, they fostered a research culture and encouraged local colleagues to engage in research practices, such as initiating reading groups focused on topics of contemporary relevance (Abimbola et al., 2016; Liao & Asis, 2020), and led broader systemic transformations. For instance, Chinese returnees contributed to the development of world-class universities in China by introducing Western academic and scientific norms, including the values of academic freedom and the importance of equal opportunities for research funding (Li, 2006; Zweig & Yang, 2014). This is because Chinese returnee scholars believed that the establishment of Western academic norms meant a more liberal and transparent research system in universities, which would attract more returnees, thereby benefiting research development in their home countries. Chinese returnees also built research infrastructure by establishing research centres, introducing new research methods, and developing new academic norms, such as equal competition (Liao & Asis, 2020; Zweig & Yang, 2014). These efforts, as believed by Selvaratnam (1985), helped train local researchers in their home countries and cultivated intellectual communities capable of tackling global and local problems by offering solutions. Furthermore, returnees, Chinese returnees in particular, were found to promote international research collaborations by connecting their home countries to global scientific networks and creating opportunities for knowledge exchange (Cao et al., 2020; Tian, 2016; Velema, 2012; Welch & Jie, 2013).

The potential impact of returnees on the research output and global standing of their home countries has also been recognised by the scholarship (Pan, 2011). Empirical studies conducted by Cao et al. (2020) and Velema (2012) demonstrate that Chinese and Taiwanese returnee scholars had higher research productivity and citation impact compared to their domestic counterparts, which can be attributed to their stronger connections with foreign scholars. However, Velema (2012) noted that not all returnees had a similar impact on the academic communities in their home countries. Taiwanese returnees affiliated with top-tier Taiwan research institutes and universities received more citations, were more often referred to as top scholars in their field, and occupied more central positions in the field than those affiliated with lower tier institutes or educated in Taiwan. This suggests that the effects of returnees on their home countries are contingent on the nature, context, and quality of their foreign working experience. Velema's (2012) findings resonate with the observations of Zhao et al. (2020), who found that although returnee scientists in China experienced an upsurge in productivity and corresponding authorship rates, they contributed less to top-tier journals than their domestic-educated counterparts. According to Zhao et al. (2020), the research performance of returnees was influenced by various factors including the timing of their return to China, their countries of study, and their academic disciplines.

In addition to improving research capacity and output, returnees transferred new knowledge to students through teaching at universities. They introduced new themes into existing courses, created innovative courses, and in some cases, established brand new degree programmes (for example (Campbell, 2020; Campbell et al., 2021; Campbell & Neff, 2020; Jamison & Madden, 2021; Liao & Asis, 2020; Rakovcová & Drbohlav, 2022). A notable example of this impact was the introduction of subjects such as geographic information systems (GIS) into the local curriculum in Philippines (Liao & Asis, 2020). Another instance was the case of Chinese

returnee Xia Shuzhang, a renowned scholar in Chinese public administration known as 'the father of China's MPA' (Master of Public Administration), who obtained his degree from Harvard in the 1940s (Li, 2006). He was among the first to advocate for the establishment of an MPA degree programme in China. The educational backgrounds and international professional networks of such returnees significantly influenced the design and development of the university programs under their leadership. By incorporating innovative subjects and technologies into the educational system, returnees endeavoured to create dynamic learning environments.

University teaching can also impact the development of political culture, as it can enable the dissemination of civic and democratic values. Returnees interviewed in a study conducted by Campbell et al. (2021) emphasised the importance of sharing knowledge on citizenship, voter's rights, and human rights in their university teaching, as it could lead to a more informed citizenry, as will be discussed more in depth later in the next discussion.

4.1.4. Transformations of political culture

The literature highlights the links between international higher education and the development of political culture at home. This is particularly evident in the cases where the overseas destinations were democratic countries. Student returnees, acting as catalysts for transformation, have the potential to introduce new political values, a comprehensive understanding of institutional operations, and expectations regarding the dynamics between governments and citizens (Chankseliani, 2018).

A number of studies examined the link between international higher education and democratic change (Atkinson, 2010; Campbell et al., 2021; Campbell & Lavallee, 2020; Chankseliani, 2018). In one of the earliest studies on the democratising impact of international higher education, Spilimbergo (2009) noted that individuals who had acquired a foreign education were more likely to promote liberal values in their home countries, provided they had pursued their education in democratic countries. Returnees, who often had exposure to international media, were in the position to engage in lobbying efforts with foreign governments to advocate for change in their home countries. According to Spilimbergo (2009), overseas education fostered a sense of shared identity within an international community that values democracy. Similarly, Atkinson (2010) linked US-hosted exchange programmes to the diffusion of democratic and liberal values across authoritarian borders in his comparative analysis of student exchange programmes from 1980 to 2006. Rasamoelison et al. (2021) also suggested that student-migrant flows had an impact on political interest and the promotion of democratic political systems in sending countries. Chankseliani's (2018) research shed light on the democratic development in former Soviet states. The study revealed that countries with a larger percentage of students who had studied in Europe or the United States exhibited higher levels of democratic development. Conversely, former Soviet states with a greater proportion of students who had studied in authoritarian or illiberal destinations experienced notably lower levels of democratic development. The role of the political culture in the destination country and the subject studied is highlighted by Han (2013), who looked at Chinese returnees working in central government. Han (2013) conducted a comparative analysis, examining the impact of returnees from the USSR in contrast to previous returnees who had studied in Japan and the West. Han attributed the successful mobilisation of the Chinese population to the latter group, suggesting that returnees from Japan and the West played a significant role in leading nationalist and communist revolutions in China. Moreover, scrutinising prominent positions in Chinese leadership between the 1980s and the 1990s, Han argued that while many returnees came to impart new ideas and know-hows to China, they largely had no significant impact on Chinese political culture, as the overwhelming majority of returnees had studied Science and Engineering.

The scholarship also highlighted diverse pathways to democracy across different countries (Atkinson, 2010; Li, 2006). According to Atkinson (2010), improving human rights practices in international students' home countries may require focusing on basic rights and freedoms as a first step in a process of gradual liberalisation toward full democracy. Chinese returnees proposed different paths to democracy and refused one-size-fits-all solutions (Li, 2006). The paths to democracy can differ based on the unique cultural, social, and political context of their home countries, and returnees from the US and Europe endorsed incremental political liberalisation rather than radical democratic transformation in China (Ibid.). Zweig and Yang's (2014) research on returnees and the diffusion of international norms in China appears to confirm Li's (2006) point that returnees were met by a rigid culture that demands conformity, which could hamper their ability to make systemic contributions to their country. However, Zweig and Yang (2014) observed that returnees often created pockets of Western values within large organisations, such as universities, through which they exercised a certain level of autonomy that allowed them to transfer some of the liberal norms they had acquired overseas. The authors suggested that the desire to attract foreign educated individuals created an incentive for organisations to adopt more liberal international norms.

Case studies also showed how returnees influenced changes in political culture through their work in governmental and non-governmental organisations. In some instances, holding decision-making positions in their countries' national and local governments allowed returnees to implement policies and programmes that had a positive impact on people's lives. For example, Georgian alumni who held government positions played an instrumental role in reorganising Soviet structures, running programmes, and enhancing administrative efficiency (Campbell, 2017). Their experience and education abroad gave them the tools to streamline government operations and make them more efficient, ultimately leading to a better quality of life for citizens (Ibid.). Similarly, returnees working in the non-governmental sector - often in leadership positions – helped to promote democracy, held elected officials accountable, and initiated reforms. For example, in 2012, student returnees in Ghana organised a Peace Forum event, which brought together stakeholders to discuss civil discourse, transparent leadership, and fair elections (Campbell & Lavallee, 2020). Through these activities, returnee students appeared to contribute to more transparent and accountable governance.

The literature also focuses on citizen-driven change that follows international higher education experiences. First, university teaching, as mentioned earlier, has been an important driver for civic development, as it expanded the support base for active citizenship. As evidenced by Campbell et al. (2021), returnees from Ghana and Nigeria believed that good education creates a strong citizenry and is intrinsically linked to good governance qualities, such as transparency, communication, cooperation, and responsibility to the people; they also believed that higher education helps citizens understand the laws, their rights, the responsibilities

of the government, how to hold officials accountable, and how to use their voting rights to choose competent leaders who will consider the interests of young people, women, and individuals with disabilities when making policies and decisions. These returnees actively contributed to civil society by engaging in higher education teaching and training (Campbell et al., 2021).

In addition to teaching, returnees actively promoted civic values to the public through other arenas. One article highlighted how Nigerian returnees worked closely with media (e.g. newspapers and radio programmes) to raise awareness of the population (Campbell et al., 2021). By striving to expose local populations to civic values, returnees sought to create an environment more conducive to democratic change (Campbell & Baxter, 2019). As commented by Spilimbergo (2009), foreign-educated individuals' efforts of sharing new ideas have the potential to make it more challenging for dictatorial regimes to maintain control.

4.1.5. A still emerging link between societal changes in four areas and development in students' home countries

Despite the thematic synthesis results suggesting such societal changes, this subsection further clarifies that these changes do not necessarily equate to evidence to support the link between international higher education and development in students home countries.

First, most of the articles included in this systematic review are case studies on societal changes are limited to specific countries, and as a result, there is a lack of global-scale evidence supporting the link between international higher education, societal changes student returnees brought about and the development of home countries. Among the various areas of study, only three papers (Chankseliani, 2018; Rasamoelison, Averett, & Stifel, 2021; Spilimbergo, 2009) have conducted international-scale comprehensive analyses of the correlation between international higher education and the development of sending countries. One of these papers, authored by Rasamoelison et al. (2021), focused on GDP growth of OECD countries and revealed significant and positive effects of student migration on per capita GDP in sending countries. Despite using data on outbound student mobility, Rasamoelison et al. (2021) noted that most students return after completing their studies abroad, and observed the correlation between student mobilities and sending countries' GDP growth across various time lags, indicating that student migrants play a modest yet meaningful role in contributing to short-term economic development in their respective home countries. Similarly, in the realm of political transformations, Spilimbergo (2009) utilized time lags to explore the link between outbound student mobility and its positive impact on democracy in students' home countries. Therefore, while data on return students may be lacking, the evidence in these two areas (economic growth and political transformations) suggests a broader correlation between international education mobility and the development of students' home countries. However, in areas of firm growth and research development, the focus has predominantly been on China. Social transformations have been examined in more diverse countries, including Georgia, Moldova, Ghana, Nigeria, Bulgaria, Kyrgyzstan, and Afghanistan, but these examinations have been primarily conducted through case studies at the organisational level. Consequently, due to the absence of meta-analyses and a comprehensive assessment of the correlation between studying abroad and the contribution of student returnees to their home countries' development across different areas of societal changes, the existing scholarship on international higher education and development of students' home countries is still in the emerging stages.

Moreover, although the articles under review have highlighted certain societal changes, they do not fully capture the multifaceted nature of development. For instance, the focus on economic growth and GDP as markers of development resulting from international student mobility overshadows other critical aspects such as poverty alleviation and sustainable development. Additionally, crucial factors like corruption levels, rule of law, government transparency, and efficiency have not been sufficiently explored in the context of political transformation. In the sphere of higher education and research capacity, metrics like research paper citations and publications, especially in countries like China, have been overemphasised. This focus neglects other vital dimensions of development in higher education and research, such as the participation of women and overall higher education enrolment rates. Furthermore, important areas such as average life expectancy, improvements in healthcare conditions, peace, and environmental protection are missing in the exiting scholarship. Overall, there is a significant gap in the literature concerning how student mobility intersects with or challenges these diverse aspects of development. The articles reviewed herein demonstrate this oversight, underscoring the need for a more holistic examination of these issues.

4.2. International higher education and individual (trans)formation

Studying abroad has a formative effect on students, providing them with a wealth of knowledge, skills, and experiences that they can apply upon returning to their home countries. In some instances, the experience of international higher education can be transformative, as studying and living abroad can engender novel ways of thinking and a process of critical self-reflection and awareness. Such experiences usually enable international students to develop new perspectives and insights on societies and motivate them to contribute to their home countries. There exists a large body of literature on the impact of international mobility on individual students. This section of the paper analysis the evidence on this subject matter draw only from the studies included in this systematic review, i.e. the studies which are concerned with the broader societal impact of international student mobility.

International students' capability to contribute to their home countries is enhanced by acquiring new knowledge and skills which range from the knowledge of academic subject matter to the knowledge of democratic governance structures, from communication and English skills to risk management and industrial technologies. These can be put in service of their communities and the wider society when internationally mobile students return home. For example, new business knowledge, such as communication, strategic analysis, and risk management techniques can be used to assist local businesses in China, as shown by Lin et al. (2014). Another example was from Malaysia where a student studying in the Netherlands conducted research on water supply and utilised the new knowledge to implement changes in water cleaning techniques and improve water infrastructure, thereby contributing to the betterment of their community (Rakovcová & Drbohlav, 2022). Furthermore, studying abroad equips international students with academic knowledge

and research skills that can be transferred to their respective academic and research sectors in their home countries, as discussed earlier with regard to the development of higher education and research (Welch & Jie, 2013). International students also develop their knowledge on building civic and democratic societies. For example, a Kyrgyzstani returnee reported that studying abroad enabled him to gain knowledge on civic mechanisms and democratic governance structures that he put in practice when supporting Kyrgyzstan's transition to a parliamentary system in 2010 (Jailobaeva & Baialieva, 2020). The scholarship also indicates that returnees often develop soft skills like fluency in English (Campbell, 2017), critical thinking (Perna & Jumakulov, 2015), and evidence-based decision-making (North et al., 2022), which they can utilise to enhance their contributions to their home country.

Studying abroad enhances students' social capital by establishing international connections that enable returnees to engage in various development activities in their home countries. One way of doing this is through forming international business and industry connections which can help secure funding for social and economic development projects, scale up start-ups, and access advanced industrial knowledge and information upon return home (Dai & Liu, 2009; Hao et al., 2019; Si et al., 2021; Wang et al., 2011). The acquisition of such international connections can provide an essential avenue for students to secure resources, generate innovative ideas, and achieve sustainable growth in their home countries. Moreover, studying abroad often fosters the development of international research and academic networks, which can be used to support collaborations and knowledge sharing between institutions across different countries. Through these networks, returnees engaged in joint research and academic projects (Cao et al., 2020; North et al., 2022). International networks can also provide a platform for social and political activism: one article specifically showed how returnees collaborated on projects aimed at developing their home countries (Campbell, 2017). These international connections, as will be discussed in the next subsection, are essential for returnees to mobilise resources, engage in advocacy, and collaborate on development initiatives.

Studying abroad was also found to cultivate a range of social values and attitudes among returnees, including awareness of social equity and inclusion, and encouragement of philanthropic mindsets (Campbell & Neff, 2020). Literature also highlights that studying abroad often leads to a greater appreciation of democratic values, such as political equality, freedom of speech, and the rule of law (Atkinson, 2010; Chankseliani, 2018; Li, 2006). According to the scholarship, studying abroad allows international students to engage with diverse cultures and social contexts, facilitating exposure to democratic and civic values; these experiences challenge pre-existing assumptions, and can foster new perspectives towards societies (see for example, Campbell, 2017). Literature emphasises that overseas experiences can motivate returnees to support philanthropic initiatives and engage in volunteer activities to give back to their home countries. For example, a American student returnee explained that her involvement in volunteer work for refugee settlement stemmed from her developed respect for other cultures and heightened sensitivity to others' needs, which she gained through her study abroad experience; another American student returnee, after studying in Europe and Africa, became aware of his relatively privileged position in the United States, and this realisation empowered him to share his resources and actively engage in volunteer work, driven by a sense of responsibility and a desire to assist others (Jon & Fry, 2021; also see Glorius, 2021; Rakovcová & Drbohlav, 2022). In a similar vein, living in host countries encouraged self-reflective practices that promoted a deeper understanding of their own culture (Jailobaeva & Baialieva, 2020) as well as others (Fulbright, 1976; Selvaratnam, 1985).

In conclusion, the reviewed evidence indicates that during their time studying abroad, students acquire valuable knowledge, skills, and experiences that reshape their perspectives, broaden their networks, and enhance their psychological resilience. Studying abroad fosters new values and instils a commitment to contribute to the development of their home countries. These acquired attributes enable them to adopt innovative approaches to address challenges, engage in social and political activism, and facilitate societal changes upon their return.

4.3. Institutional factors which influence how returnees contribute to development

The contribution of returnees to the societal changes of their home countries is contingent upon a range of institutional factors that impinge upon their ability to exercise agency and use their capabilities. Institutional factors here encompass political culture, governance, industry and family contexts, policies, institutionalised scholarship programmes, organisational and cultural norms that shape the environment in which returnees operate.

To begin with, the literature indicates that the level of democracy in the home country has an impact on the capability of returnees to bring about change. This is exemplified by the varying levels of returnee contributions observed in Moldova and Georgia, where Georgia's earlier transition towards a more open and democratic society likely influenced the discrepancy between different levels of returnee contributions observed in the two countries (Campbell, 2016). Importantly, the relatively more democratic context in Georgia was a direct outcome of the reforms implemented by a group of Western-educated individuals, as explained by Chankseliani (2018). In Taiwan, decentralised government structures facilitated returnees to contribute by allowing regional and local governments to adapt policies and strategies to better suit their communities (Saxenian & Hsu, 2001). These examples highlight the importance of political development in shaping returnees' capacity to make change in their home countries.

The institutional culture within the government in returnees' home countries can be another discouraging factor in terms of returnees' capabilities to make contributions. Literature demonstrates that bureaucracy, corruption, and nepotism deter returnees from contributing to their societies in countries like China, Afghanistan, and Ghana among others (Campbell et al., 2021; van Houte, 2014; Zweig & Yang, 2014). For instance, perceived nepotism in hiring practices within local governments in Ghana made it challenging for returnees to secure meaningful employment (Campbell et al., 2021). Similarly, in a centralised government context such as China, loyalty and ideological alignment are prioritised over merit and professionalism, which can silence returnees' voices in politics and limit their ability to engage in policymaking and other forms of political activism (Han, 2013). Moreover, the institutional culture within state organisations can also include a culture of resistance to change and innovation, which can affect the implementation of

new ideas, technologies, or approaches to development. For instance, in the case of reforming the research system in a particular university in China, local fellows' unwillingness to reform and adopt new research approaches impeded the implementation of innovative solutions (Zweig & Yang, 2014).

Local institutional culture and norms in domestic organisations can present additional obstacles to returnees' contributions, as evidenced by a returnee from Kazakhstan who described feeling like an outsider in their workplace due to differences in the working environment (Perna & Jumakulov, 2015). According to Perna et al. (2015), the local firms' institutional culture limits the contribution of Bolashak recipients as they encounter obstacles when trying to apply the knowledge gained abroad to existing institutional norms, such as social and professional expectations and accepted ways of doing things within the local institutional context. This issue is particularly prominent when recipients are employed in organisations with a limited presence of overseas returnees, resulting in a feeling of being disconnected and experiencing reverse cultural shock. Similarly, as noticed by Wang et al. (2011), the indigenous Chinese firms' organisational culture of encouraging teamwork and cooperation was essential for the success of development initiatives and for facilitating the integration of returnees into their local communities.

The level of industrial development in a returnee's home country is another important factor in enabling returnees' impact. Well-developed industrial ecosystems can provide returnees with opportunities to apply their newly-acquired skills and knowledge in their respective fields, as demonstrated in the case of Taiwan (Kenney et al., 2013; Saxenian & Hsu, 2001). Conversely, underdeveloped industrial systems in some contexts such as China can represent significant barriers to the effective contribution of returnees (Chen, 2008; Rakovcová & Drbohlav, 2022; Welch & Jie, 2013). This is exemplified by the finding that individuals returning to China only had notable spillover effects on the research and development intensity of domestic companies that possessed a minimal technology gap (Wei et al., 2017).

Besides the institutional factors outlined above, the literature offers evidence that being part of a scholarship programme can support the capacity of individuals to lead on changes particularly through peer support and communities of practice. First, being part of a scholarship programme can facilitate the continuous contributions of returnees by providing access to peers with specialised skills and ideas, as demonstrated by U.S. scholarship graduates driving social and economic change in Georgia (also see in Abimbola et al., 2016; Campbell & Baxter, 2019). Second, scholarship programmes provided alumni with communities of practice. Through these communities, returnees worked collaboratively in driving social change and political reforms in their home countries, as evidenced in Georgia and Ghana (Campbell & Lavallee, 2020).

However, some factors can both enable or hinder the impact of returnees on the societal changes of their home countries. First, the literature shows how governmental policies can impact returnees in different ways. While some articles argued that governmental policies can facilitate the positive impact of returnees by creating conditions for them to use their newly-acquired skills and knowledge, as in case of China (Lin et al., 2014; Liu et al., 2010; Pan, 2011; Welch & Jie, 2013), other authors illustrated how such policies inadvertently benefited certain groups of returnees over others, thereby limiting the contributions of some returnees (Campbell et al., 2021). For example, policies that prioritise overseas PhD degree returnees over those without a PhD may create a disincentive for non-PhD returnees to return home or to engage in development initiatives, despite possessing valuable skills and knowledge (Campbell et al., 2021). Second, the role of family in shaping returnees' contributions can also be complex, with family acting as both an encouraging and discouraging factor for students' return migration. In some cases, family is the main reason pulling students back home (Glorius, 2021), while in other cases, family members discourage international students from returning (Campbell, 2020). Additionally, family pressures to conform to traditional roles and responsibilities can limit the ability of returnees, particularly women, to pursue professional opportunities upon their return (Liao & Asis, 2020).

5. Discussion and conclusion

This systematic literature review has elucidated the role of international student returnees in the pursuit of societal changes within their countries of origin. It has not only synthesized existing literature but also carved out a distinct area of enquiry – international student mobility and societal development - within the field of higher education studies. By consolidating and critically examining the societal implications of international student mobility, our study provides the foundation for an area of enquiry that, despite its growing importance, has not been comprehensively explored until now.

The results show that international student returnees can stimulate technological innovation in industry, foster industrial upgrading, bolster research capacity, impart knowledge, and instigate reforms within higher education systems. Moreover, returnees can act as crucial agents in the formation of a more civically oriented and inclusive societies in their home countries. The literature describes how they actively engage in local political arenas, propagate democratic ideals and values, and participate in the social and political transformations of their communities through various means. It is important to note that the societal changes facilitated by returnees are interconnected and mutually influential. For instance, home countries' democratic development is instrumental in driving societal progress across other sectors. Recognising these interconnections enables a more profound comprehension of the holistic and sustainable development engendered by returnees in their countries of origin.

The literature also emphasises the transformative potential of international higher education in nurturing international students as agents of change. Apart from cultivating social and democratic values and enhancing students' motivation to initiate change, international higher education also equips them with valuable knowledge, skills, and social capital necessary for effecting change. However, the extent of returnees' contributions to their home countries' development is contingent upon various institutional factors, including political culture, governance, industry and family contexts, policies, institutionalised scholarship programmes, organisational and cultural norms. Recognising the influence of these factors can assist policymakers and stakeholders in creating environments that maximise the potential of returnees to contribute to their home countries' development. Continuous support from both home and

host countries' governments and scholarship programmes is crucial in promoting the effective re-integration and contributions of returnees.

While interpreting the findings, it is important to acknowledge several limitations of this review. Firstly, the review's validity is contingent upon the quality of the included articles and the potential biases they may possess. Although the review employed a systematic approach to identify relevant studies meeting specific criteria for rigour, the diverse methods used prevented a meta-analysis and a comprehensive assessment of causality between studying abroad and the contribution of student returnees to home countries' development. Additionally, due to a great diversity of contexts and different foci of the analysed studies, caution must be exercised in generalising the results. Secondly, systematic reviews are subject to limitations arising from search strategies, databases searched, and inclusion and exclusion criteria. In this review, although the search was conducted across two databases in an effort to capture a broad range of literature across disciplines, a restriction to peer-reviewed literature published in English resulted in the exclusion of other forms of scholarly work, such as working papers, conference papers, books, and book chapters. In light of our findings, it is pertinent to acknowledge a recent report by our team (Kwak and Chankseliani, 2023), which further corroborates the nuanced implications of international mobility on world development, underscoring the significance of continuous empirical scrutiny beyond peer-reviewed academic discourse.

This systematic review has important implications for future research. Firstly, it consolidates an important area of enquiry in the field of international higher education. For future research, it would be beneficial to explore the societal implications of international student mobility for a broader range of domains such as poverty reduction, public health, and environmental sustainability. Investigating these areas could provide more nuanced insights into the relationship between international higher education and societal change. Moreover, future research would greatly benefit from more diverse case studies in terms of home countries, host countries, areas of developmental impact. Underrepresented regions, such as the Middle East, South America, and South Asia can offer unique insights into the influence of social, cultural, and political contexts on the contributions of student returnees. By analysing the experiences of international student returnees in diverse settings, researchers can gain a more comprehensive understanding of the factors that shape the engagement and effectiveness of international students in driving development outcomes in their home countries. Furthermore, though it is important to recognise the complexity of development and avoid overgeneralising findings across different contexts and regions, it would be valuable to examine the long-term and large-scale impacts of student mobility.

Secondly, the review shows that the existing literature lacks rigorous comparisons of the contributions made by student returnees with local control groups who did not pursue higher education abroad (except Dai & Liu, 2009; Velema, 2012). This gap highlights the need for measuring the impact of international higher education versus domestic higher education. Future studies can also examine the specific contributions made by different cohorts of student returnees. For example, comparing students from the same home country but studying in different host countries can provide valuable insights into the diverse effects associated with different types of international higher education experiences. Another aspect worth comparing is returnees' contributions when contextual factors, policies, and government priorities within the same national context undergo shifts over time. Using the lens of temporality could offer more precise analysis of the contextual factors which enable or constrain returnees' contributions.

Thirdly, as presented in Section 3.3, the existing literature predominantly concentrates on the return flows of students from developed Western countries to developing countries. This emphasis reflects the modernisation and dependency theories that underpin and theoretically frame the existing literature. These theories assume a dichotomy between Western nations as advanced and non-Western countries as less-developed or underdeveloped and expecting that the latter will follow the trajectory of modernisation set by Western countries (Chankseliani, 2022a; Chankseliani & McCowan, 2021; Goldstein et al., 2023; Haider et al., 2018; Pan, 2011; Thelen, 1999). However, a growing number of scholars in development studies highlight a blurring world division and shared challenges, which call for critical examination of development issues in Western countries and their roles in world development (Horner, 2020). Therefore, future research on the societal implications of international student mobilities should broaden the geographic focus of mobilities, thereby challenging the dichotomy entrenched in conventional development literature. By exploring a wider range of contexts, researchers can shed light on the diverse dynamics and interdependencies that shape the contributions of international students to development outcomes, beyond the traditional framework of Western countries as donors and non-Western countries as recipients. This broader perspective can provide a more nuanced understanding of the complex processes of world development and the roles played by international student mobility.

Funding

CRediT authorship contribution statement

Zhe Wang: Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Conceptualization. **Natalya Hanley:** Writing – original draft, Formal analysis. **Joonghyun Kwak:** Writing – original draft, Visualization, Methodology, Formal analysis. **Ilka Vari-Lavoisier:** Writing – original draft, Formal analysis. **Mira Al Hussein:** Writing – original draft, Formal analysis. **Lorena Sanchez Tyson:** Writing – review & editing. **Ahmad Akkad:** Writing – review & editing. **Maia Chankseliani:** Writing – review & editing, Software, Methodology, Funding acquisition, Conceptualization.

Declarations of competing interest

None.

Appendix 1. Search strings for WoS and Scopus

scopus:

(TITLE (international OR transnational OR overseas OR abroad OR global OR foreign OR "cross border") AND TITLE (student* OR graduat* OR alumn* OR postgraduat* OR universit* OR study* OR learn* OR educat* OR program* OR learner* OR undergraduate*) AND TITLE-ABS-KEY (mobilit* OR returnee* OR "returning home" OR "going back" OR travel* OR migra* OR immigra* OR flow* OR outflow OR inflow OR experienc*) AND TITLE (development* OR impact* OR chang* OR transform* OR reconstruct* OR influenc* OR innovat* OR grow*) AND TITLE-ABS-KEY (social* OR societ* OR politic* OR health OR poverty OR education OR economic OR gender OR lgbt* OR "human rights" OR democra* OR freedom* OR inclus* OR just* OR equal* OR equit* OR sustainabl* OR wellbeing OR "rule of law")) AND (EXCLUDE (SUBJAREA, "MEDI") OR EXCLUDE (SUBJAREA, "ENGI") OR EXCLUDE (SUBJAREA, "COMP") OR EXCLUDE (SUBJAREA, "ENVI") OR EXCLUDE (SUBJAREA, "NURS") OR EXCLUDE (SUBJAREA, "EART") OR EXCLUDE (SUBJAREA, "ENER") OR EXCLUDE (SUBJAREA, "AGRI") OR EXCLUDE (SUBJAREA, "BIOC") OR EXCLUDE (SUBJAREA, "HEAL") OR EXCLUDE (SUBJAREA, "PHAR") OR EXCLUDE (SUBJAREA, "MATH") OR EXCLUDE (SUBJAREA, "PHYS") OR EXCLUDE (SUBJAREA, "MATE") OR EXCLUDE (SUBJAREA, "CENG") OR EXCLUDE (SUBJAREA, "IMMU") OR EXCLUDE (SUBJAREA, "NEUR") OR EXCLUDE (SUBJAREA, "DENT") OR EXCLUDE (SUBJAREA, "VETE") OR EXCLUDE (SUBJAREA, "CHEM")) AND (LIMIT-TO (DOCTYPE, "ar") OR LIMIT-TO (DOCTYPE, "re"))

Web of Science

Web of science does not have option 'Title-ABS-KEY'. It either ALL or only ONE category. So, I decided to do the following procedure.

1. I did three separate researches with 'Title', 'ABS' and 'KEYs' within 1960–2022 period. I applied the suggested strings within each category.
2. Then I combined them: 'TITLE' AND 'ABS' AND 'KEYs'. Result: 2 sources.
3. And I also combined them: TITLE OR ABS OR KEYs. Result:50,819.
4. I took the last result (50,819) and 'refined' with view articles (there is not book chapters or books). Result: 2785
5. 'Excluded' areas like Nursing **or** Clinical Neurology **or** Pharmacology Pharmacy **or** Psychiatry **or** Biology **or** Critical Care Medicine **or** Medical Informatics **or** Otorhinolaryngology **or** Chemistry etc.

Appendix 2. A simplified version of the extraction sheet

	Title	Year of publication	Area of development 1	Area of development 2	Area of development 3	If empirical, strategy of inquiry	Home country	Host country
1	International student-migrant flows and growth in low- and middle-income countries: brain gain or brain drain?	2021	Contributing to the national economic growth			quant	Unspecified foreign countries	United States, Australia, Canada, New Zealand, the the United Kingdom, France, and Belgium
2	University teaching and citizenship education as sustainable development in Ghana and Nigeria: insight from international scholarship program alumni	2020	Encouraging and supporting social transformations			qual	Ghana, Nigeria	the Netherlands, United States, the United Kingdom, South Africa
3	Examining change in migration strategies over the life course of international PhD students	2022	Encouraging and supporting social transformations			qual	Malasia, Kenya	the Netherland
4	Social innovation within transnational flows of knowledge:	2021	Encouraging and supporting social transformations			qual	Bulgaria	Germany

(continued on next page)

(*continued*)

	Title	Year of publication	Area of development 1	Area of development 2	Area of development 3	If empirical, strategy of inquiry	Home country	Host country
	The example of student mobility from Bulgaria							
5	The Silicon Valley-Hsinchu connection: technical communities and industrial upgrading	2001	Supporting firm growth			mixed	Taiwan	United States
6	Does soft power matter? A comparative analysis of student exchange programs 1980–2006	2010	Transforming political culture and supporting freedoms and justice			quant	Unspecified foreign countries	United States
7	The politics of student mobility: Links between outbound student flows and the democratic development of post-Soviet Eurasia	2018	Transforming political culture and supporting freedoms and justice			quant	USSR	Russia, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden
8	Democracy and foreign education	2009	Transforming political culture and supporting freedoms and justice			quant	Unspecified foreign countries	N/A
9	Overseas students, returnees, and the diffusion of international norms into post-Mao China	2014	Promoting higher education and research			mixed	China	N/A
10	The limits of brain circulation: Chinese returnees and technological development in Beijing	2008	Promoting higher education and research	Contributing to the national economic growth		qual	China	N/A
11	Returnee Entrepreneurs: Impact on China's globalization process	2011	Supporting firm growth			qual	China	N/A
12	Returnee entrepreneurs, knowledge spillovers and innovation in high-tech firms in emerging economies	2010	Supporting firm growth			quant	China	Australia, Austria, Belgium, Canada, Chile, Colombia, Costa Rica, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, Netherlands,

(*continued*)

	Title	Year of publication	Area of development 1	Area of development 2	Area of development 3	If empirical, strategy of inquiry	Home country	Host country
								New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States, Guernsey, Isle of Man, Jersey, and the Faroe Islands
13	Cambodian returnees' entrepreneurial ventures: The opportunities and constraints of mixed embeddedness	2013	Supporting firm growth			qual	Cambodia	United States, France
14	Returnees and diaspora as source of innovation in Chinese higher education	2013	Promoting higher education and research	Transforming political culture and supporting freedoms and justice		mixed	China	N/A
15	Returnees and their Political Impact: evidence from returned students and trainees from the Soviet Union in China, 1950–1966	2013	Transforming political culture and supporting freedoms and justice			quant	China	USSR
16	Returnee talent and corporate investment: Evidence from China	2016	Supporting firm growth			quant	China	N/A
17	Intellectual returnees as drivers of indigenous innovation: Evidence from the Chinese photovoltaic industry	2017	Supporting firm growth			mixed	China	N/A
18	Chinese migrants and their impact on homeland development	2017	Supporting firm growth			quant	China	Australia, Austria, Belgium, Canada, Chile, Colombia, Costa Rica, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States
19	Highly skilled returnees and the	2017	Supporting firm growth			quant	China	N/A

(*continued*)

	Title	Year of publication	Area of development 1	Area of development 2	Area of development 3	If empirical, strategy of inquiry	Home country	Host country
	internationalization of EMNEs: Firm level evidence from China							
20	Returnee entrepreneurs and firm performance in Chinese high-technology industries	2009	Supporting firm growth			quant	China	N/A
21	Returnee Executives, Corporate Social Responsibility, and Stock Price Synchronicity	2022	Supporting firm growth			quant	China	N/A
22	Returned students and political change in China	2006	Transforming political culture and supporting freedoms and justice			qual	China	N/A
23	The role of returnee executives in improving green innovation performance of Chinese manufacturing enterprises: Implications for sustainable development strategy	2018	Supporting firm growth			quant	China	Australia, Austria, Belgium, Canada, Chile, Colombia, Costa Rica, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States, Hong Kong, Macao, Taiwan,
24	The influence of returnee technology executives on enterprise innovation: the innovation patent data of global exchange market listed companies	2022	Supporting firm growth			quant	China	N/A
25	R&D internationalization and innovation performance of Chinese enterprises: The mediating role of returnees and foreign professionals	2020	Supporting firm growth			quant	China	N/A
26	FDI knowledge spillovers and returnees' repatriation speed and irregularity:	2021	Supporting firm growth			quant	China	N/A

(*continued*)

	Title	Year of publication	Area of development 1	Area of development 2	Area of development 3	If empirical, strategy of inquiry	Home country	Host country
	evidence from Chinese high-tech firms							
27	Returnee CEO and innovation in Chinese high-tech SMEs	2014	Supporting firm growth			mixed	China	N/A
28	Returning scientists and the emergence of China's science system	2020	Promoting higher education and research			quant	China	United States, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden
29	Transnational experience and high-performing entrepreneurs in emerging economies: Evidence from Vietnam	2021	Supporting firm growth			quant	Vietnam	N/A
30	Giving back' to one's country following an international higher education scholarship: comparing in-country and expatriate alumni perceptions of engagement in social and economic change in Moldova	2020	Contributing to the national economic growth	Encouraging and supporting social transformations	Transforming political culture and supporting freedoms and justice	qual	Moldova	United States
31	Back to the Philippines: Connecting aspirations, return and social remittances in international student migration	2020	Encouraging and supporting social transformations	Promoting higher education and research		qual	Philippines	Albania, Andorra, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Italy, Kazakhstan, Kosovo, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Moldova, Monaco, Montenegro, Netherlands, North

(*continued*)

	Title	Year of publication	Area of development 1	Area of development 2	Area of development 3	If empirical, strategy of inquiry	Home country	Host country
								Macedonia, Norway, Poland, Portugal, Romania, Russia, San Marino, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, Vatican City.
32	An investigation of the relationship between scientists' mobility to/ from China and their research performance	2020	Promoting higher education and research			quant	China	N/A
33	Brain circulation, diaspora and scientific progress: A study of the international migration of Chinese scientists, 1998–2006	2016	Promoting higher education and research			quant	China	United States, United Kingdom, Canada, Australia and New Zealand, Singapore, Hong Kong.
34	Returnees for change? Afghan return migrants' identification with the conflict and their potential to be agents of change	2014	Encouraging and supporting social transformations	Contributing to the national economic growth		qual	Afghanistan	Netherlands, the United Kingdom, Germany, Sweden, Norway, Denmark
35	Coming back home after the sun rises: Returnee entrepreneurs and growth of high tech industries	2012	Supporting firm growth			qual	China, India, Taiwan	United States
36	Higher education and the Sustainable Development Goals	2020	Promoting higher education and research	Encouraging and supporting social transformations	Transforming political culture and supporting freedoms and justice	qual	Unspecified foreign countries	N/A
37	Sponsored study abroad and civic engagement in Kyrgyzstan	2020	Encouraging and supporting social transformations	Transforming political culture and supporting freedoms and justice		qual	Kyrgyzstan	United States, the United Kingdom, Turkey, India
38	The Most Significant and Important Activity I Have Been Privileged to Engage in during My Years in the Senate	1976	Encouraging and supporting social transformations			qual	Unspecified foreign countries	United States
39	Study Abroad and Engagement at the Local and Global Levels: The Stories Behind the Numbers	2021	Encouraging and supporting social transformations			qual	United States	N/A
40	Australian higher education scholarships as tools for international development and diplomacy in Africa	2016	Encouraging and supporting social transformations			mixed	Kenya, Uganda, Mozambique	Australia
41	Education abroad, human capital development, and national	2011	Contributing to the national economic growth	Promoting higher education and research		qual	China	N/A

(*continued*)

	Title	Year of publication	Area of development 1	Area of development 2	Area of development 3	If empirical, strategy of inquiry	Home country	Host country
	competitiveness: China's brain gain strategies							
42	Letting it sink in: The longer-term impact of a social work short-term study abroad course	2022	Transforming political culture and supporting freedoms and justice			qual	United States	India
43	More than Knowledge Transfer? Alumni Perspectives on the Value of Postgraduate Study for International Development	2022	Encouraging and supporting social transformations			qual	Unspecified foreign countries	the United Kingdom
44	The international flow of scholars and students: A vehicle for cross-cultural understanding, international co-operation and global development?	1985	Promoting higher education and research	Contributing to the national economic growth		qual	developing countries	the United Kingdom
45	The contingent nature of brain gain and brain circulation: their foreign context and the impact of return scientists on the scientific community in their country of origin	2012	Promoting higher education and research			quant	Taiwan	N/A
46	International Scholarship Graduates Influencing Social and Economic Development at Home: The Role of Alumni Networks in Georgia and Moldova.	2016	Encouraging and supporting social transformations	Contributing to the national economic growth		qual	Georgia, Moldova	United States
47	A community of practice for social justice: Examining the case of an international scholarship alumni association in Ghana	2020	Encouraging and supporting social transformations			qual	Ghana	United States
48	International scholarships and home country civil service: Comparing perspectives of government employment for social change in Ghana and Nigeria	2021	Encouraging and supporting social transformations			qual	Ghana, Nigeria	United States
49	Exploring the attributes and practices of alumni associations that advance social change	2019	Encouraging and supporting social transformations			qual	Georgia, Ghana, Mongolia	United States
50	Understanding the human capital benefits of a government-funded international scholarship program: An exploration of Kazakhstan's Bolashak program	2015	Contributing to the national economic growth			qual	Kazakhstan	United States

(*continued*)

	Title	Year of publication	Area of development 1	Area of development 2	Area of development 3	If empirical, strategy of inquiry	Home country	Host country
51	A systematic review of international higher education scholarships for students from the Global South	2021	Promoting higher education and research	Encouraging and supporting social transformations		qual	unspecific foreign countries	N/A
52	How international scholarship recipients perceive their contributions to the development of their home countries: Findings from a comparative study of Georgia and Moldova	2017	Encouraging and supporting social transformations			qual	Georgia, Moldova	United States
53	Developing capacities for meeting the SDGs: exploring the role of a public land-grant institution in the civic engagement of its African alumni	2021	Encouraging and supporting social transformations	Transforming political culture and supporting freedoms and justice		qual	Kenya, Tanzania, Rwanda, Uganda, Somalia, Malawi, and Senegal	United States

Appendix 3. Coding and themes

Analytical theme 1

Descriptive themes		coding			Article number
1.1 Student returnees contribute to home countries' economic development	Student returnees contribute to firm growth	Investment	Introducing foreign venture capital and investment to set up resources and an environment well suited to enabling companies to grow		11, 13, 19, 26, 5, 12
			Improving firm investment efficiency significantly		16,
		Management	Bringing back commercial and business knowledge to lead more effective and informed firm operation		11, 13, 20, 21, 50
			Improving the management of human resources		11, 13
		Innovation and technology transfer[1]	Positively affecting innovation (patents, R&D)		12, 17, 23, 24, 25, 27
			Facilitating technology transfer and increase firms' absorptive capacity of external knowledge		12, 17, 20, 25, 26, 35,
			Facilitating technology spillovers to other local firms.		12, 17, 18,
		Global engagement	Increasing exports: sell domestic products to the outside world		11, 18,
			Helping list domestic firms overseas		11,
			Leading outbound M&A		11,
			Connecting firms to "the global world,"		20, 50, 5,
	Student returnees contribute to other aspects of economic development	Poverty alleviation[2]			2,
		Industrial upgrade			10, 17, 19, 29, 35, 5,
		New economic policy making			15, 22,
		National GDP growth			1,
1.2 Student returnees contribute to home countries' higher education and research development	Student returnees improve home countries' research capacity	Encouraging local colleagues to engage in research practices			22, 31, 40 44
		Increasing publication			28, 32, 33, 41, 45
		Promoting international research cooperation			14, 28, 31, 33, 45
		Building research cnetres and introducing new research methods			9, 22, 31, 44,
	Student returnees transfer new knowledge to university students	Initiating new higher education programs and teaching in universities			2, 3, 9, 22, 30, 31, 41, 44, 51, 52, 53
	Student returnees contribute to the development of higher	Spreading values through everyday work			2, 9, 40, 53,
		Advising authorities			2, 43,

(*continued on next page*)

(*continued*)

Descriptive themes		coding	Article number
	education system in their home countries.	Conducting reforms to make world-class universities by bringing Western academic and scientific norms (e.g. academic freedom and equal competition for research funding)	9, 22, 43, 52,
1.3 Student returnees contribute to home countries' social development	Student returnees promote social diversity, equality and inclusion in their home countries.	Promoting gender equality	2, 4, 30, 34, 37, 39, 46, 48,
		Promoting disability rights	2, 46, 47, 48, 49
		Helping other marginalized groups	2, 4, 13, 30, 34, 37, 39, 40, 42,43, 46, 47, 48, 49, 51, 52, 53,
	Student returnees conduct other common good activities	Improving healthcare	4, 40, 43,
		Promoting peace building	2, 34, 38,
		Contributing to rural development	48
1.4 Student returnees contribute to home countries' Political change and democracy		Having a positive effect on the local people's interest in politics and democratic political systems in the sending countries	1, 6, 7,
		Spreading democratic ideas and values:	2, 6, 8, 22, 42, 49,
		Civically engaging in the social and political issues of their society in their home country	2, 37, 47, 52, 53,
		Finding diverse pathways to democracy	6, 22,
1.5 Areas of change are interconnected and mutually influenced		Education as a key to developing their home countries	2, 13, 43, 49,
		Law of rules as the groundwork of SDGs	22,
		Achieving sustainable development through green innovation in industry	23,
		Impact of democratic level on development in various areas	6, 10, 14, 16, 41, 46, 5,

[1] Returnees can promote innovation and facilitate technology transfer in R&D by applying their advanced knowledge and skills and establishing international connections.

[2] Only one article mentions international education mobility and poverty reduction, and paper 40 explains this by stating international education mobility may not lead to poverty reduction, 'given that scholarships do not generally target the poor.'

Analytical theme 2

Descriptive themes	Coding	Article number
2.1 Student returnees have acquired knowledge and skills.	Industrial technology	3, 10, 11, 12, 17, 20, 23, 24, 25, 26, 35, 41, 44, 5,
	Business knowledge	11, 16, 19, 20, 29, 35, 41, 50, 52, 5,
	Academic knowledge and research ability	9, 14, 22, 28, 32, 33, 41, 44, 50, 53, 45,
	Soft skills	22, 42, 43, 44, 48, 50, 52, 53
	Psychological capital	6, 13, 34, 42, 43, 53,
	Other/general skills and knowledge without singling out any specific ones	1, 2, 4, 30, 31, 40, 43, 48, 51
2.2 Student returnees have accumulated social capital.	International business and industry connections	11, 20, 23, 25, 29, 5,
	International research and academic networks	22, 28, 43, 44, 51, 53, 45
	Alumni networks	4, 40, 46, 47, 48, 49,
	Respect and trust from home/host societies	11, 48,
2.3 Student returnees have been developed social values[1].	Awareness of social diversity, equity, and inclusion	3, 4, 6, 8, 11, 12, 13, 16, 21, 22, 30, 31, 34, 36, 37, 39, 42, 48, 51, 53,
	Motivation to give back to home countries	2, 3, 4, 37, 39, 40, 51, 52,
2.4 Student returnees developed a greater appreciation for democratic values	Understanding of the importance of political equality and freedom, etc. (e.g. rights to vote and freedom of speech)	1, 2, 6, 7, 8, 9, 13, 22, 30, 34, 36, 53,
	Understanding of the importance of rule of law	22, 36,
	Understanding of the importance of openness and transparency of government	2, 22, 34,
	Less democracy promotion in home countries by foreign-educated individuals if the education is obtained in non-democratic countries	8
2.5 Student returnees fostered greater intercultural mutual understanding and global mindset	A better understanding of home country while studying abroad	37, 22,
	Intercultural understanding	4, 44, 37, 38, 40, 51,
	Global mindset	39, 51
2.6 Student returnees developed a heightened sense of environmental awareness	Environmental awareness	39, 51,

[1] Although social values and democratic values are related concepts, this paper highlights their distinct transformative nature in the context of international education. Social values prioritize EDI, social cohesion, and community building, while democratic values prioritize democratic governance, the protection of individual rights, and civic engagement.

Analytical theme 3

Descriptive themes		coding	Article number
3.1 Government supports/limits returnees' contribution.	Government supports returnees' contribution	Government policy facilitates impact	**5,** 11, 14, 19, 22, 23,27, 35, 41,
	Government limits returnees' contribution	Perceived nepotism in hiring practices in the local government impede impact	2, 48
		Bureaucracy at the local government	48, 52
		Administrative control and centralized government regulations, lack of openness and freedom	14,
		Lack of support from the local government	2, 4, **50,**
		Corruption	14, 34, 48, 52
3.2 Social, cultural and industrial contexts in home countries supports/limits returnees' contribution	Social, cultural and industrial contexts in home countries supports returnees' contribution	Improved social, industrial and scientific systems facilitate contributions	14, 35, 5
		Effective teamwork and cooperation at the local level facilitate the impact of returnees	11, 5,
	Social, cultural and industrial contexts in home countries limits returnees' contribution	Underdeveloped social, industrial and scientific systems are barriers of contributions	3, 9, 10, 14, 18, 30, 34, 35, 50, 52,
		Local resistance to/ slow reaction to change	9, 14, 30, 31, 34,
		Selection route of central government silences returnees in politics	15,
3.3 Returnees' personal backgrounds		Family as the factor both encouraging/discouraging students' return migration	4, 30, 34,
		locally situated knowledge, norms, and networks	4, 10, 14, 11, 18, 22, 27,
		Voluntary returnees are the only group that could potentially contribute to Afghan peace-building and development, while involuntary returnees were not	34,
		Returnees' occupation when they try to make changes	2, 31, 43, 3, 6, 19, 27, 30, 52,
		Positive impact of post-return transnational mobilities and citizenship from other (western) countries	34,
3.4 Scholarship and other structured programs have both positive and negative impacts		Scholarship peers provided support for their activities through advice, encouragement, and volunteering collaborated directly on team projects; and organized to address larger social problems.	30, 37, 40, 43, 46, 47, 48, 49
		Scholarship's negative impact	50,
3.5 Post-return transnational/translocal/alumni networks are essential to returnees' continuous contributions.		Post-return transnational/translocal/alumni networks	4, 11, 14, 27, 34, 40, 46, 47, 49, 53, 5,
3.6 Other facilitators also influence returnees' contribution to societal changes		Investment, financial support, funding opportunities	10, 26, 49,

References

Abimbola, S., Amazan, R., Vizintin, P., Howie, L., Cumming, R., & Negin, J. (2016). Australian higher education scholarships as tools for international development and diplomacy in Africa. *Australian Journal of International Affairs, 70*(2), 105–120. https://doi.org/10.1080/10357718.2015.1119230. Scopus.

Atkinson, C. (2010). Does soft power matter? A comparative analysis of student exchange programs 1980–2006. *Foreign Policy Analysis, 6*(1), 1–22.

Boccanfuso, D., Larouche, A., & Trandafir, M. (2015). Quality of higher education and the labor market in developing countries: Evidence from an education reform in senegal. *World Development, 74*, 412–424. https://doi.org/10.1016/j.worlddev.2015.05.007

Boly, A., Coniglio, N. D., Prota, F., & Seric, A. (2014). Diaspora investments and firm export performance in selected sub-Saharan African countries. *World Development, 59*, 422–433. https://doi.org/10.1016/j.worlddev.2014.02.006

Campbell, A. C. (2016). International scholarship graduates influencing social and economic development at home: The role of alumni networks in Georgia and Moldova. *Current Issues in Comparative Education, 19*(1), 76–91.

Campbell, A. C. (2017). How international scholarship recipients perceive their contributions to the development of their home countries: Findings from a comparative study of Georgia and Moldova. *International Journal of Educational Development, 55*(C), 56–62.

Campbell, A. C. (2020). Giving back' to one's country following an international higher education scholarship: Comparing in-country and expatriate alumni perceptions of engagement in social and economic change in Moldova. *Compare, 50*(4), 573–591. https://doi.org/10.1080/03057925.2018.1540925. Scopus.

Campbell, A. C., & Baxter, A. R. (2019). Exploring the attributes and practices of alumni associations that advance social change. *International Journal of Educational Development, 66*, 164–172.

Campbell, A. C., Kelly-Weber, E., & Lavallee, C. (2021a). University teaching and citizenship education as sustainable development in Ghana and Nigeria: Insight from international scholarship program alumni. *Higher Education, 81*(1), 129–144. https://doi.org/10.1007/s10734-019-00484-3. Scopus.

Campbell, A. C., & Lavallee, C. A. (2020). A community of practice for social justice: Examining the case of an international scholarship alumni association in Ghana. *Journal of Studies in International Education, 24*(4), 409–423.

Campbell, A. C., Lavallee, C. A., & Kelly-Weber, E. (2021b). International scholarships and home country civil service: Comparing perspectives of government employment for social change in Ghana and Nigeria. *International Journal of Educational Development, 82*. https://doi.org/10.1016/j.ijedudev.2021.102352. Scopus.

Campbell, A. C., & Neff, E. (2020). A systematic review of international higher education scholarships for students from the global south. *Review of Educational Research, 90*(6), 824–861. https://doi.org/10.3102/0034654320947783

Cao, C., Baas, J., Wagner, C. S., & Jonkers, K. (2020). Returning scientists and the emergence of China's science system. *Science and Public Policy, 47*(2), 172–183.

Chankseliani, M. (2018). The politics of student mobility: Links between outbound student flows and the democratic development of post-soviet Eurasia. *International Journal of Educational Development, 62*, 281–288.

Chankseliani, M. (2022a). International development higher education: Looking from the past, looking to the future. *Oxford Review of Education, 48*(4), 457–473. https://doi.org/10.1080/03054985.2022.2077325

Chankseliani, M. (2022b). *What happened to the soviet university?* Oxford University Press.

Chankseliani, M., & McCowan, T. (2021). Higher education and the sustainable development goals. *Higher Education, 81*(1), 1–8. https://doi.org/10.1007/s10734-020-00652-w

Chen, Y. C. (2008). The limits of brain circulation: Chinese returnees and technological development in Beijing. *Pacific Affairs, 81*(2), 195–215.

Chieffo, L., & Griffiths, L. (2004). Large-scale assessment of student attitudes after a short-term study abroad program. *Frontiers: The Interdisciplinary Journal of Study Abroad, 10*, 165–177.

Chiocca, E. S. (2021). Talking with 'Others': Experiences and perspective transformation in a short-term study abroad program. *Frontiers: The Interdisciplinary Journal of Study Abroad, 33*(2). https://doi.org/10.36366/frontiers.v33i2.484. Article 2.

Clemens, M. A., Özden, Ç., & Rapoport, H. (2014). Migration and development research is moving far beyond remittances. *World Development, 64*, 121–124. https://doi.org/10.1016/j.worlddev.2014.05.018

Dahles, H. (2013). Cambodian returnees' entrepreneurial ventures: The opportunities and constraints of mixed embeddedness. *Journal of Enterprising Communities: People and Places in the Global Economy*.

Dai, O., & Liu, X. (2009). Returnee entrepreneurs and firm performance in Chinese high-technology industries. *International Business Review, 18*(4), 373–386.

Donoso, S., Pavlic, R. D., & Cumsille, R. B. (2023). Social policy expansion from below? The case of Chile's student movement and free tuition higher education. *World Development, 167*, Article 106213. https://doi.org/10.1016/j.worlddev.2023.106213

Dreher, A., & Poutvaara, P. (2011). Foreign students and migration to the United States. *World Development, 39*(8), 1294–1307.

Fu, X., Hou, J., & Sanfilippo, M. (2017). Highly skilled returnees and the internationalization of EMNEs: Firm level evidence from China. *International Business Review, 26*(3), 579–591.

Fulbright, J. W. (1976). The most significant and important activity i have been privileged to engage in during my years in the senate. *The Annals of the American Academy of Political and Social Science, 424*, 1–5.

Gao, D., Zhao, Y., & Tian, Q. (2022). Returnee executives, corporate social responsibility, and stock price synchronicity. *Frontiers in Psychology, 13*.

Glorius, B. (2021). Social innovation within transnational flows of knowledge: The example of student mobility from Bulgaria. *Population, Space and Place, 27*(5), e2452. https://doi.org/10.1002/psp.2452

Goldstein, J. E., Neimark, B., Garvey, B., & Phelps, J. (2023). Unlocking "lock-in" and path dependency: A review across disciplines and socio-environmental contexts. *World Development, 161*, Article 106116. https://doi.org/10.1016/j.worlddev.2022.106116

Gough, D., Oliver, S., & Thomas, J. (2017). *An introduction to systematic reviews.* Sage.

Guba, E. G. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. *ECTJ, 29*(2), 75–91. https://doi.org/10.1007/BF02766777

Gümüş, S., Gök, E., & Esen, M. (2020). A Review of Research on International Student Mobility: Science Mapping the Existing Knowledge Base. *Journal of Studies in International Education, 24*(5), 495–517. https://doi.org/10.1177/1028315319893651

Guo, R., Zhang, D., Shi, L., & Ning, L. (2021). FDI knowledge spillovers and returnees' repatriation speed and irregularity: Evidence from Chinese high-tech firms. *Technology Analysis & Strategic Management*, 1–14.

Gyimah-Brempong, K., Paddison, O., & Mitiku, W. (2006). Higher education and economic growth in Africa. *The Journal of Development Studies, 42*(3), 509–529. https://doi.org/10.1080/00220380600576490

Haider, L. J., Boonstra, W. J., Peterson, G. D., & Schlüter, M. (2018). Traps and sustainable development in rural areas: A review. *World Development, 101*, 311–321.

Han, D. (2013). Returnees and their political impact: Evidence from returned students and trainees from the Soviet Union in China, 1950–1966. *Journal of Contemporary China, 22*(84), 1106–1123.

Hao, X., Fan, C., Long, Y., & Pan, J. (2019). The role of returnee executives in improving green innovation performance of Chinese manufacturing enterprises: Implications for sustainable development strategy. *Business Strategy and the Environment, 28*(5), 804–818.

Harden, A., Brunton, G., Fletcher, A., Oakley, A., Burchett, H., & Backhans, M. (2006). *Young people, pregnancy and social exclusion: A systematic synthesis of research evidence to identify effective, appropriate and promising approaches for prevention and support.*

Horner, R. (2020). Towards a new paradigm of global development? Beyond the limits of international development. *Progress in Human Geography, 44*(3), 415–436.

Hydén, G. (2017). The role and impact of funding agencies on higher education and research for development. *North–South Knowledge Networks*.

Jailobaeva, K., & Baialieva, M. (2020). Sponsored study abroad and civic engagement in Kyrgyzstan. *Journal of Civil Society, 16*(3), 234–242. https://doi.org/10.1080/17448689.2020.1794169. Scopus.

Jamison, A., & Madden, M. (2021). Developing capacities for meeting the SDGs: Exploring the role of a public land-grant institution in the civic engagement of its African alumni. *Higher Education, 81*(1), 145–162.

Jon, J. E., & Fry, G. W. (2021). Study abroad and engagement at the local and global levels: The stories behind the numbers. *Journal of Studies in International Education, 25*(4), 407–424. https://doi.org/10.1177/10283153211016276

Kenney, M., Breznitz, D., & Murphree, M. (2013). Coming back home after the sun rises: Returnee entrepreneurs and growth of high tech industries. *Research Policy, 42*(2), 391–407. https://doi.org/10.1016/j.respol.2012.08.001

Kwak, J., Chankseliani, M., (2023). Quantitative Analysis International Mobility and World Development: Estimating the System-Level Impact of the Bureau of Educational and Cultural Affairs (ECA) and International Exchanges. Washington DC: US State Department Bureau of Educational and Cultural Affairs. https://eca.state.gov/files/bureau/interim_report-quant_analysis-508_4.pdf.

Lan, X., Li, Z., & Wang, Z. (2022). The influence of returnee technology executives on enterprise innovation: The innovation patent data of global exchange market listed companies. *Economic Research-Ekonomska Istraživanja*, 1–16.

Li, H. (2006). Returned students and political change in China. *Asian Perspective, 30*(2), 5–29.

Liao, K. K. A., & Asis, M. (2020). Back to the Philippines: Connecting aspirations, return and social remittances in international student migration. *Asian and Pacific Migration Journal, 29*(3), 402–421. https://doi.org/10.1177/0117196820964999

Licuanan, V., Omar Mahmoud, T., & Steinmayr, A. (2015). The drivers of diaspora donations for development: Evidence from the Philippines. *World Development, 65*, 94–109. https://doi.org/10.1016/j.worlddev.2014.05.010

Lin, D., Lu, J., Liu, X., & Choi, S.-J. (2014). Returnee CEO and innovation in Chinese high-tech SMEs. *International Journal of Technology Management, 65*(1–4), 151–171.

Liu, X., Lu, J., Filatotchev, I., Buck, T., & Wright, M. (2010). Returnee entrepreneurs, knowledge spillovers and innovation in high-tech firms in emerging economies. *Journal of International Business Studies, 41*(7), 1183–1197.

Luo, S., Lovely, M. E., & Popp, D. (2017). Intellectual returnees as drivers of indigenous innovation: Evidence from the Chinese photovoltaic industry. *The World Economy, 40*(11), 2424–2454.

Mays, N., Pope, C., & Popay, J. (2005). Systematically reviewing qualitative and quantitative evidence to inform management and policy-making in the health field. *Journal of Health Services Research & Policy, 10*(1_suppl), 6–20.

North, A., Westerveld, R., Yates, C., Warwick, I., & Chase, E. (2022). More than knowledge transfer? Alumni perspectives on the value of postgraduate study for international development. *Progress in Development Studies, 22*(3), 257–271. https://doi.org/10.1177/14649934211065576. Scopus.

Nunan, F., Menton, M., McDermott, C. L., Huxham, M., & Schreckenberg, K. (2021). How does governance mediate links between ecosystem services and poverty alleviation? Results from a systematic mapping and thematic synthesis of literature. *World Development, 146*, Article 105595.

Oldac, Y. (2021). *Self-formation and societal contribution: the case of Turkish international higher education graduates* [DPhil thesis in Education, University of Oxford]. https://scholars.ln.edu.hk/en/publications/self-formation-and-societal-contribution-the-case-of-turkish-inte.

Pan, S. Y. (2011). Education abroad, human capital development, and national competitiveness: China's brain gain strategies. *Frontiers of Education in China, 6*(1), 106–138. https://doi.org/10.1007/s11516-011-0124-4

Paul, A. M. (2017). *Multinational maids: Stepwise migration in a global labor market.* Cambridge University Press.

Perna, L. W., & Jumakulov, Z. (2015). Understanding the human capital benefits of a government-funded international scholarship program: An exploration of Kazakhstan's Bolashak program. *International Journal of Educational Development, 40*, 85–97.

Petticrew, M., & Roberts, H. (2008). *Systematic reviews in the social sciences: A practical guide*. John Wiley & Sons.

Popay, J., Roberts, H., Sowden, A., Petticrew, M., Arai, L., Rodgers, M., Britten, N., Roen, K., & Duffy, S. (2006). Guidance on the conduct of narrative synthesis in systematic reviews. *A Product from the ESRC Methods Programme Version, 1*(1), b92.

Puryear, J. M. (1994). *Thinking politics: Intellectuals and democracy in Chile, 1973-1988*. Johns Hopkins University Press.

Rakovcová, D., & Drbohlav, D. (2022). Examining change in migration strategies over the life course of international PhD students. *Longitudinal and Life Course Studies, 13*(2), 263–285. https://doi.org/10.1332/175795921×16147616363118. Scopus.

Rasamoelison, J. D., Averett, S., & Stifel, D. (2021). International student-migrant flows and growth in low- and middle-income countries: Brain gain or brain drain? *Applied Economics, 53*(34), 3913–3930. https://doi.org/10.1080/00036846.2021.1886237. Scopus.

Ryan, G. W. (2005). What are standards of rigor for qualitative research. *Workshop on interdisciplinary standards for systematic qualitative research* (pp. 28–35).

Saxenian, A., & Hsu, J.-Y. (2001). The Silicon Valley–Hsinchu connection: Technical communities and industrial upgrading. *Industrial and Corporate Change, 10*(4), 893–920.

Selvaratnam, V. (1985). The international flow of scholars and students: A vehicle for cross-cultural understanding, international co-operation and global development? *International Journal of Educational Development, 5*(4), 307–323. https://doi.org/10.1016/0738-0593(85)90026-4. Scopus.

Si, Y., Zhang, Y., & Teng, T. (2021). R&D internationalization and innovation performance of Chinese enterprises: The mediating role of returnees and foreign professionals. *Growth and Change, 52*(4), 2194–2212.

Snilstveit, B., Oliver, S., & Vojtkova, M. (2012). Narrative approaches to systematic review and synthesis of evidence for international development policy and practice. *Journal of Development Effectiveness, 4*(3), 409–429.

Somani, R. (2021). The returns to higher education and public employment. *World Development, 144*, Article 105471. https://doi.org/10.1016/j.worlddev.2021.105471

Spilimbergo, A. (2009). Democracy and foreign education. *American Economic Review, 99*(1), 528–543.

Stenfors, T., Kajamaa, A., & Bennett, D. (2020). How to… assess the quality of qualitative research. *The Clinical Teacher, 17*(6), 596–599.

Thelen, K. (1999). Historical institutionalism in comparative politics. *Annual Review of Political Science, 2*(1), 369–404.

Thomas, J., & Harden, A. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Medical Research Methodology, 8*(1), 1–10.

Thomas, J., Kavanagh, J., Tucker, H., Burchett, H., Tripney, J., & Oakley, A. (2007). *Accidental injury, risk-taking behaviour and the social circumstances in which young people (aged 12-24) live: A systematic review*.

Tian, F. (2016). Brain circulation, diaspora and scientific progress: A study of the international migration of Chinese scientists, 1998-2006. *Asian and Pacific Migration Journal, 25*(3), 296–319. https://doi.org/10.1177/0117196816656637. Scopus.

UNESCO. (2023). *Global flow of tertiary-level students*. http://uis.unesco.org/en/uis-student-flow.

UNESCO (no date). *Internationally mobile students*. https://uis.unesco.org/node/4789141.

van Houte, M. (2014). Returnees for change? Afghan return migrants' identification with the conflict and their potential to be agents of change. *Conflict, Security & Development, 14*(5), 565–591. https://doi.org/10.1080/14678802.2014.963392

Velema, T. A. (2012). The contingent nature of brain gain and brain circulation: Their foreign context and the impact of return scientists on the scientific community in their country of origin. *Scientometrics, 93*(3). https://doi.org/10.1007/s11192-012-0751-4

Wang, B. (2020). A temporal gaze towards academic migration: Everyday times, lifetimes and temporal strategies amongst early career Chinese academic returnees. *Time & Society, 29*(1), 166–186. https://doi.org/10.1177/0961463×19873806

Wang, H., Zweig, D., & Lin, X. (2011). Returnee Entrepreneurs: Impact on China's globalization process. *Journal of Contemporary China, 20*(70), 413–431.

Waters, J., & Brooks, R. (2021). The value of international higher education. *Student migrants and contemporary educational mobilities* (pp. 87–130). Springer.

Wei, Y., Liu, X., Lu, J., & Yang, J. (2017). Chinese migrants and their impact on homeland development. *The World Economy, 40*(11), 2354–2377.

Welch, A., & Jie, H. A. O. (2013). Returnees and diaspora as source of innovation in Chinese higher education. *Frontiers of Education in China, 8*(2), 214–238.

Zhao, Z., Bu, Y., Kang, L., Min, C., Bian, Y., Tang, L., & Li, J. (2020). An investigation of the relationship between scientists' mobility to/from China and their research performance. *Journal of Informetrics, 14*(2), Article 101037. https://doi.org/10.1016/j.joi.2020.101037

Zweig, D., & Yang, F. (2014). Overseas students, returnees, and the diffusion of international norms into post-Mao China. *International Studies Review, 16*(2), 252–263.