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International student mobility, Covid-19, and the labour market: a scoping review

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Abstract
The Covid-19 pandemic resulted in significant disruptions to both international student mobility and labour markets. Against this background, this scoping review documents findings from 35 studies, published between January 2020 and February 2024, that focused on international student mobility, Covid-19, labour market outcomes, and related regulations. The review shows that the Covid-19 pandemic negatively impacted (1) the labour market outcomes of international students before studying abroad, through changes in visa regulations, (2) skill acquisition during their mobility, (3) the duration of their studies, and (4) the availability of jobs during and after their mobility period. These negative impacts occurred at a time when international students' needs for work were heightened. This 'double whammy' was more pronounced among international students from lower socio-economic backgrounds, increasing pre-existing inequalities. It was also affected by students' residency status and policy changes. These findings underline the critical role that temporality plays in shaping the returns to international student mobility. However, the existing literature on the topic is relatively sparse and has primarily relied upon qualitative approaches and rapid research. Future studies are needed to better understand the impact of Covid-19 on the labour market outcomes of international students.

Keywords International student mobility, Covid-19, Labour market, Scoping review

Introduction

Previous studies have shown a small to moderate positive association between international student mobility (ISM) and better labour market outcomes (Di Pietro, 2022a; Pietro, 2022b; Netz & Cordua, 2021; Waibel et al., 2017), as well as more likely transitions into international careers (Roy et al., 2019). Prior research also highlights that ISM has heterogeneous effects on labour market outcomes and identifies key areas of heterogeneity that future research should account for, including temporality (Netz, 2021). Temporality refers to the significance of context and cohort effects, such as historical events, for understanding the relationships between key variables. This study aims to

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document what we know about the temporality dimension of Covid-19 in the broader literature on ISM and labour market outcomes. The findings of this review can shed light on the effects of the Covid-19 crisis and thus help inform different higher education stakeholders'—including policymakers, higher education institutions and employers—preparations for future crises of a similar nature, which many experts consider likely in the medium term (WHO, 2023; Pringle, 2024). By understanding how pandemic crises such as Covid-19 affect international students' career trajectories, stakeholders can develop more resilient structures that better safeguard international students' educational and professional outcomes. This is particularly important given the increasing number of international students.

Covid-19 resulted in significant disruptions to education (Schleicher, 2020), ISM (Farnell et al., 2021; Mok et al., 2021) and labour markets (Khamis et al., 2021; Stevenson, 2020). Since the start of the pandemic, empirical evidence has emerged regarding the myriad of ways through which various labour market outcomes relevant for international students were affected by the pandemic. For example, early evidence suggests that work conditions and labour policies impacting ISM shifted during the Covid-19 pandemic (see Home Office, 2022; Times Higher Education, 2022), while international students were also affected by loss of employment (Fronek et al. 2021). In addition, both domestic (Capone et al., 2021) and international students (Koo & Nyunt, 2023) expressed concerns about the impact of the pandemic on their labour market prospects. Against this background, this scoping review aims to map the evidence at the intersection of three areas of research: (1) ISM, (2) labour market outcomes, and (3) Covid-19.

This scoping review has two specific research questions:

1. What findings emerge from studies focused on international student mobility, labour market outcomes, and Covid-19?

2. What labour market policies and regulations affected labour market outcomes for international students during the Covid-19 pandemic?

Research method

Scoping review approach

Scoping reviews provide a rapid understanding of a research area (Arksey & O'Malley, 2005) and a snapshot of the field (Xiao & Watson, 2019). In particular, they offer an indication of the number of studies available within a body of literature, provide an in-depth overview of the focus of this body of literature, and help identify questions that would be useful for further, more specific, systematic reviews (Munn et al., 2018).

Defining labour market outcomes and ISM

Labour market outcomes are considered broadly in the context of this review. They include employability-related activities during study (for example, internships and placements), skills development, and labour market outcomes (for example, unemployment, employment, work hours, and earnings). The paper also looks at labour market regulations relevant to international students (for example, regulations for work during studies). This broad approach is adopted given that both data and research on labour market outcomes during Covid-19 remain limited. The paper also contributes to our understanding of the conditions that can help to explain the patterns identified around international students' labour market outcomes. Various types of ISM are considered in this

paper. These include (1) the modality of ISM (in person, online, and hybrid), (2) whether it was credit or degree mobility, and (3) whether it was short-term or long-term mobility.

Keyword search strategy

The broad consideration of labour market outcomes and ISM is reflected in the keywords used to search bibliographic databases for this review. A complete list of key terms used to screen relevant databases is included in Table 1. The list of terms was developed by the research team. It was then reviewed based on external feedback received from three peer reviewers who are ISM experts. The terms in Table 1 were combined using Boolean operators. Terms within columns were combined using an OR term. Terms between columns were combined using an AND term. The bibliometric database search syntax is included in Appendix 1.

Search strategy

Two search strategies were used for this scoping review: (1) searches of bibliographic databases, and (2) backward and forward citation analyses of relevant studies that resulted from (1). In addition to these search strategies, six additional relevant studies were added to the scoping review based on the expertise of the authors. These six studies are listed under 'Websites' in Fig. 1.

Inclusion criteria

The inclusion criteria listed in Table 2 were used to search academic databases and to screen entries from bibliographic databases for relevance.

Table 1 List of keywords for database search

Key terms for international students	Key terms for labour market outcomes	Covid-related key terms
● international student	● labour market	● pandemic
● returnee	● labor market	● coronavirus
● international graduate	● earn*	● covid
● study abroad student	● wage	● corona
● sojourner	● income	● lockdown
● exchange student	● salary	● shut down
● foreign student	● employ*	● shut-down
● student mobility	● hiring	
● student migration	● hire	
● student migrant	● promotion	
● degree mobility	● job	
● credit mobility	● work	
● short term mobility	● internship	
● long term mobility	● placement	
● short-term mobility	● work hour	
● long-term mobility	● career	
● Erasmus	● recruitment	
● Erasmus+	● economic return	
● intra-regional mobility	● rate of return	
● south-south mobility	● private return	
● north-south mobility	● unemployment	
● south-north mobility	● skill	
● student exchange	● competen*	
● placement abroad	● proficien*	
● semester abroad	● abilit*	
● year abroad		

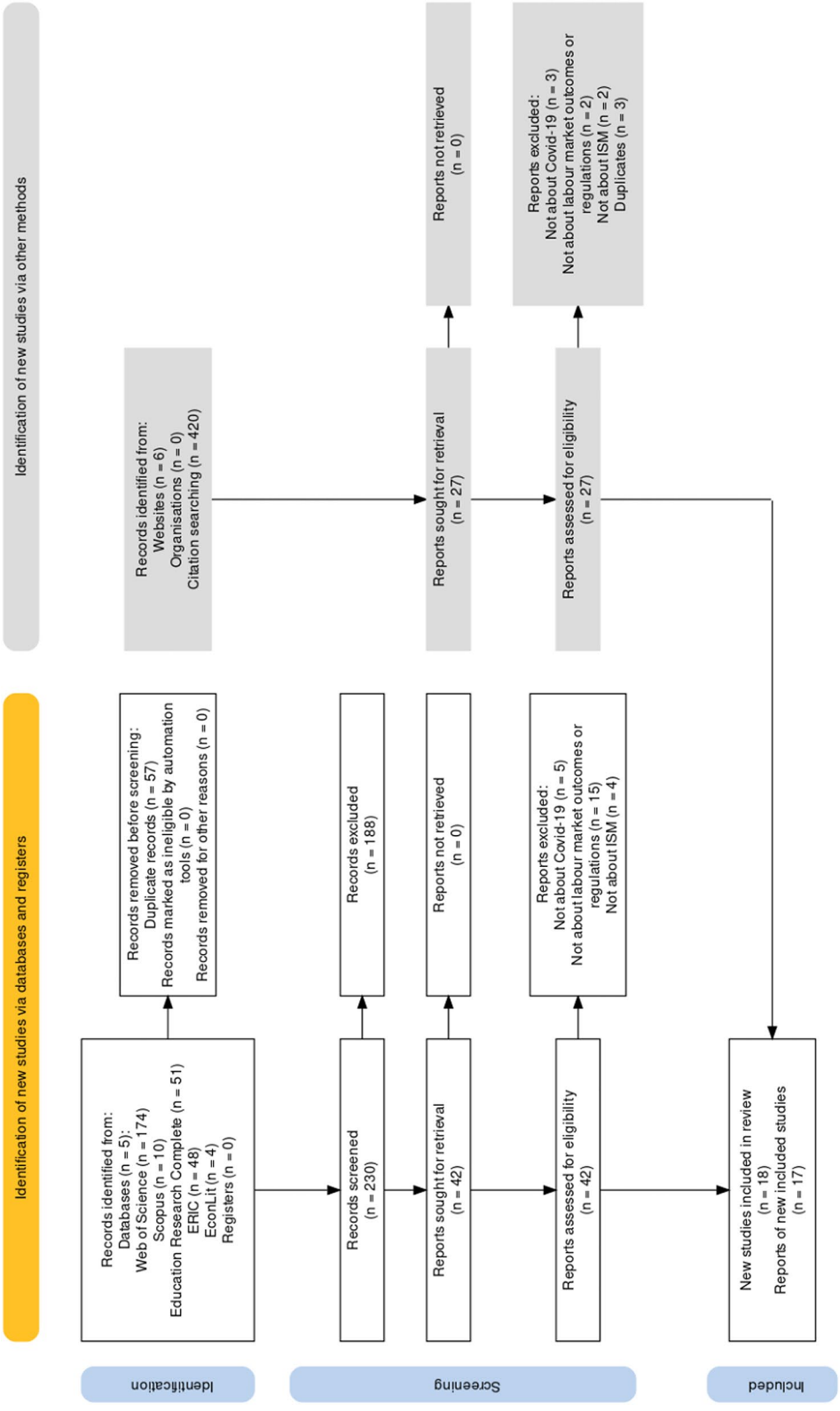

Fig. 1 PRISMA diagram: international student mobility, Covid-19, and labour market outcomes. Note See Haddaway et al., 2022

Table 2 List of inclusion criteria

Database search criteria	Relevance criteria
● Language of publication is English ● Publication between 01/01/2020 and 02/02/2024 ● Academic articles (assigned to an issue or published online first), book chapters, grey literature, PhD theses	● The study considers the relationship between international mobility and labour market outcomes or policies with reference to Covid-19 **AND** ● The study discusses labour market outcomes (including skills) of international students **AND/OR** ● The study discusses labour market policies or regulations that impact on labour market outcomes of international students

Bibliographic database searches

Five databases were searched for this scoping review: (1) Web of Science, (2) Scopus, (3) Education Research Complete, (4) ERIC, and (5) EconLit. Web of Science and Scopus were included in the analysis as they offer wide coverage of sources and include high-quality research outputs. Education Research Complete, ERIC, and EconLit were included due to their relevance for the fields of education, ISM, and economics.

The search syntax (see Appendix 1) was used by two review team members to search the five databases independently. For most databases, the search results between the two reviews matched. When search results did not match, the search with the highest number of results was included in the analysis. This applied to Education Research Complete only, due to differences in institutional library access to underlying journals. This approach ensured the replicability of the search strategy. The most recent search was conducted on February 2, 2024. The search results from each database were exported into Zotero. After removing duplicates, the database search resulted in 230 studies.

Abstract and title screening

The abstracts and titles of the 230 studies were imported into Rayyan where they were blindly reviewed for relevance by two members of the team, using the inclusion criteria listed in Table 2. Both reviewers screened each abstract and title independently. When there were divergent opinions on inclusion, the reviewers met to reach an agreement. Following this process, 188 studies were excluded, and 42 studies were found to be relevant for inclusion in the next step of the review. These 42 studies were further assessed for relevance in the information extraction stage.

Information extraction

The full text of the 42 studies that were found to be relevant in the previous stage was retrieved and the studies were assigned to members of the research team for full review and for information extraction. Information was retrieved about the labour market outcome discussed, the timing of the labour market outcome in relation to the mobility period, type of policies and regulations relevant for labour market outcomes, information about ISM such as type, geographical focus and degree level, summary of main findings, limitations, and implications for future studies, practice, and policy. During the information extraction stage, 24 additional studies were removed because they did not meet at least one of the relevance criteria. Of these 24 entries, five were not about Covid-19, 15 were not about labour market outcomes or relevant regulations, and four were not about international students.

Backward and forward citation analyses

Backward and forward citations were retrieved for citations published within the target timeframe of this scoping review (01/01/2020 and 02/02/2024). These were conducted for the 18 publications that remained relevant at the information extraction stage. We used Scopus, Web of Science, and Google Scholar for backward citations and retrieved 258 studies. We retrieved 162 studies through forward citations using Google Scholar. The same abstract and title screening process described above was used to examine these studies. An additional 21 studies were found to be relevant during screening and the full text of these studies was retrieved and information extracted following the process described above. Three studies were duplicates of previously included studies and seven further studies were excluded because they did not meet the relevance criteria. Of these seven studies, three were not about Covid-19, two were not about ISM, and two were not about labour market outcomes or relevant policies. Information was extracted for the remaining 11 studies. In addition to these 11 studies, and as already noted, we also extracted information from the six studies that were included in the scoping review based on the expertise of the research team. An overview of the scoping review process is included in Fig. 1, using the PRISMA guidelines.

Results

Mapping the research field

The analysis included in this section is based on the 35 studies that were found to be relevant following the screening and information extraction stages. Of these publications, 30 were journal articles, two were reports (Farnell et al., 2021; Morris et al., 2020), one was a book chapter (Koo, 2021), one was a PhD dissertation (Garcia-Sitton, 2024), and one was a conference proceeding paper (Beaubois et al., 2022). The *Journal of International Students* and the *Journal of Studies in International Education* published three relevant articles each. The Asia Pacific Education Review, Frontiers in Psychology, and the Journal of International Migration and Integration, published two studies each. All other journals published one relevant study each. Of the 35 studies, two were published in 2020, two in 2021, 22 in 2022, eight in 2023, and one in January 2024 (Fig. 2).

ISM takes many forms. The studies included in this scoping review primarily document labour market outcomes and policies pertaining to degree mobility students ($n = 26$). The remaining studies look at both credit and degree mobility ($n = 3$), credit mobility ($n = 3$), and short-term mobility ($n = 1$). One paper did not differentiate between mobility types and for another paper the length of mobility was unclear. Similarly, most studies focus on in-person mobilities ($n = 28$), with only five studies discussing virtual mobility. One study focused on both in-person and virtual mobility and another study did not focus on any forms of mobility. Studies primarily focused on students at

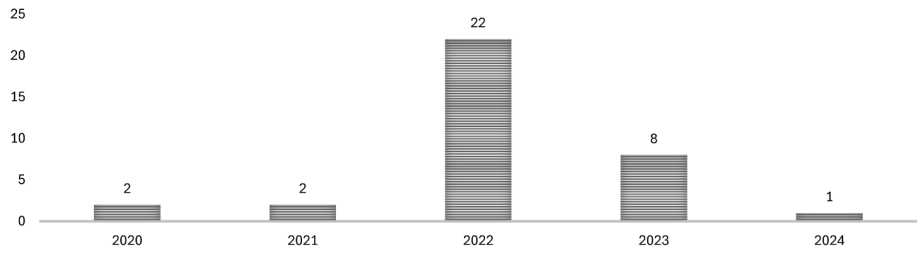

Fig. 2 Number of publications analysed per year of publication

universities, with one study only discussing outcomes among community college students (Whatley & Fischer, 2021).

The majority of studies (63%) focused primarily on English-speaking host contexts. Most studies focused on the US ($n = 7$), followed by Australia ($n = 6$), Canada ($n = 5$), and the UK ($n = 3$); one study focused on both the US and Canada. Non-English-speaking European host countries such as Germany ($n = 2$), Denmark ($n = 1$), Portugal ($n = 1$), and Spain ($n = 1$) were also represented. Three studies focused on China, with three other studies focusing on Asian countries. These findings suggest that the research field on ISM, labour market outcomes, and Covid-19 is fragmented and dominated by research about English-speaking countries. This fragmentation makes it difficult to draw comparative conclusions about student outcomes. Figure 3 visualises the number of papers by host country. This reflects the dominance of English-speaking countries in attracting international students (Helms et al., 2015).

Methodological approaches and limitations

To understand the state of the literature, it is necessary to better understand the methodological approaches of relevant studies. Thirty-two studies included analysis on empirical data. Among the three studies that did not include empirical data, two were focused on description and analysis of policies (Brunner, 2022; Buckner et al., 2022) and one described an online international student programme (Beaubois et al., 2022). Students were the most common ***participants*** of studies that used an empirical approach ($n = 28$), with two other studies reporting on data from international students among other participants (Berg & Farbenblum, 2020; Farnell et al., 2021). One study collected data from policymakers in addition to using policy analysis (Garcia-Sitton, 2024), and one study collected data from international student staff (Whatley & Fischer, 2021).

Most studies used a ***qualitative*** methodological approach ($n = 19$). Of these studies, 16 used interviews or focus groups and three used multiple methods for qualitative data collection (Garcia-Sitton, 2024; Tong et al., 2022; Xu, 2022). Six of the empirical studies used ***mixed*** methods approaches. Seven studies used a ***quantitative*** approach and collected data via a survey (see Fig. 4). The sample sizes of these quantitative studies varied from 91 (Weilage & Maráz, 2022) to 20,349 (Marczuk & Lörz, 2023). Hastings et al.

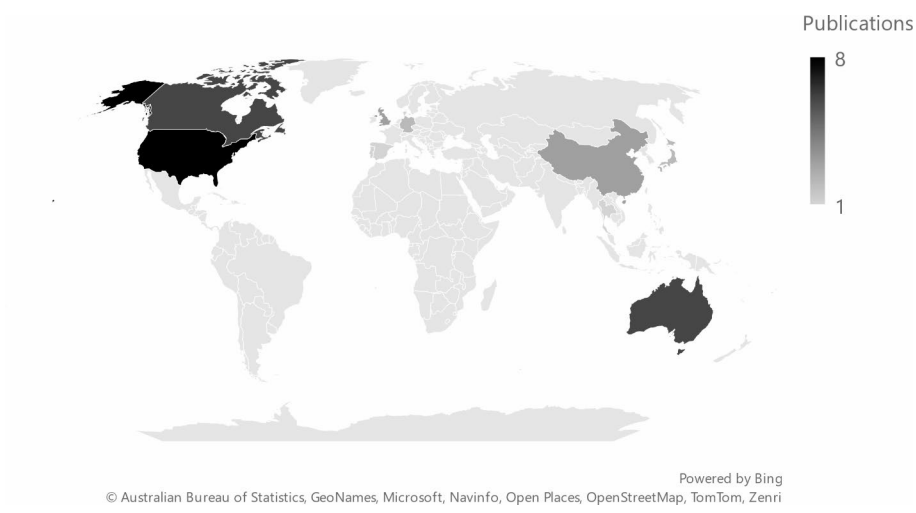

Fig. 3 Number of publications focused on host nation-states

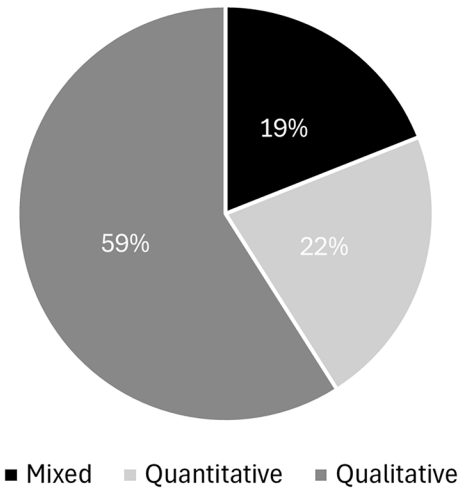

Fig. 4 Number of publications by methodological approach

(2023) included data from a follow-up survey conducted in June 2020 ($n = 817$). Farnell et al. (2021) did not collect their own data, but they reported on findings from 16 large scale rapid response surveys. Seven of the surveys used by Farnell et al. (2021) collected data from higher education institutions (HEIs) (between 33 and 805 HEIs), eight from students (number of respondents vary between 1,564 and 66,000), and one collected data from university leaders ($n = 200$).

Twenty-six of the 32 studies that use an empirical approach mention the ***limitations*** of their approach. Ten studies suggest that a small sample size is an important limitation. Twelve studies discuss the use of a non-probability sampling approach. In these studies, data was often collected from personal networks and using social media. These characteristics of the body of work have implications for the generalizability of the findings of this scoping review. Other studies ($n = 6$) discuss the limitations associated with their specific population (e.g. targeting one HEI only, one discipline only, or not capturing respondents who returned to their home countries before a second round of data collection), and their analytical approach (e.g. unable to answer questions about causality).

International student mobility, labour market outcomes, and Covid-19

Six main findings on ISM, labour market outcomes, and Covid-19 emerge from studies included in this scoping review. These are discussed below.

Impact on skills

Several studies discussed how Covid-19 has impacted on the skills development of international students. Findings from focus group data with international students across levels of education in the US ($n = 18$) suggests that engagement with conversational English was diminished during lockdowns and in online teaching environments, with implications for language skills (Koo & Jiang, 2022). Studies that look at the impact of Covid-19 on ISM emphasise the prominence of virtual ISM opportunities during Covid. Several studies discuss the skill benefits of virtual mobility and collaborative online international learning initiatives (Beaubois et al., 2022; Kanamori et al., 2022; Ndubuisi et al., 2022). As these studies do not provide sufficient empirical evidence to assess skill acquisition in virtual ISM, this represents an important area for further research.

Weilage and Maráz (2022), on the other hand, attribute variations in language skill acquisition among international students during online learning to residency status. Enrolled international students who were not present in Germany self-reported lower language skills than resident international students. This small-scale study ($n = 91$) also finds that non-resident international students were less likely to meet common German employment skill requirements. The skills of international students who studied online during the pandemic were further affected by differences in access to the internet and other digital technologies. Lack of access to relevant technology may be higher for students in low- and middle-income countries, as documented by Maqbool et al. (2022). This finding is consistent with insights about the role of technology in exacerbating educational inequalities during Covid-19 (Mohan et al., 2020).

Availability of internships, placements, and relevant work experiences

Several US and Canada-based studies report on the perception of students that fewer internships and professional development opportunities were available to them during Covid-19 (David et al., 2023; Hari et al., 2023; Park & Shimada, 2022; Sustarsic & Zhang, 2022; Tefera et al., 2023). This has been further affected by aspects such as increased time taken to process work authorisations during study and after graduation in the US context (Park & Shimada, 2022). Limited opportunities for professional development, including access to conferences and professional networks, was also a challenge for master's and doctoral students (Sustarsic & Zhang, 2022; Tefera et al., 2023). Limited professional opportunities for students from African countries may have been linked to negative immigration rhetoric in the US (David et al., 2023; Tefera et al., 2023).

Loss of job, work precarity and reduction in work hours

Several studies find that international students faced work precarity during the pandemic (Ullah & Harrigan, 2022; Hastings et al., 2023; Malet Calvo et al., 2022; Ramia et al., 2022; Whatley & Fischer, 2021). Three studies analysed self-reported survey data collected from international students in Australia at two time points: before the pandemic, in 2019 ($n = 7084$), and in June 2020 ($n = 817$) (Hastings et al., 2023; Morris et al., 2020; Ramia et al., 2022). The studies found that 61% of student workers lost their job during the pandemic and a further 25% saw their hours reduced. While the majority of international students were negatively affected, there were patterns of socio-economic inequality, with the negative effects of Covid-19 being stronger for students from lower socio-economic backgrounds. Students from working class families and students who worked in the hospitality sector were statistically significantly more likely to lose their paid work during the pandemic (Hastings et al., 2023). These findings are consistent with those of Berg and Farbenblum (2020) who found that 57% of international students lost their jobs and a further 16% had their hours and/or shifts reduced between March-July 2020. In fact, among different visa holders in Australia, international students were the most likely group to lose their jobs. Findings from German survey data that matches the population characteristics suggests that international students were more likely to lose their jobs than domestic students and that job loss increased expected study duration (Marczuk & Lörz, 2023). Qualitative insights from Portugal suggest that job loss may also be underreported, as some international students may work in informal positions without a contract (Malet Calvo et al., 2022). Job loss was also reported among

international students in the US due to campus closures (Whatley & Fischer, 2021) and in Canada (Hari et al., 2023).

Increased need to find paid work during study

Several studies reported that international students who did not rely on paid work prior to the pandemic needed to secure paid work during the pandemic. This was due to decreased purchasing power of home country currency or changes in the financial situation of family members, linked to events in the national economy of their home country during the pandemic (Malet Calvo et al., 2022; Marczuk & Lörz, 2023; Whatley & Fischer, 2021). In some cases, this may also delay graduation, with potential future labour market implications (Malet Calvo et al., 2022; Marczuk & Lörz, 2023). Pakistani international students who lost eligibility for stipends from their Chinese host institutions because they were not located in China found themselves in need of navigating the domestic labour market prior to obtaining their degree, with some difficulties (Maqbool et al., 2022).

Finding employment after graduation

Few studies looked at how Covid-19 shaped post-graduation decisions among international students. Using interviews with master's graduates from Spain, Rueff-Lopes et al. (2024) find that international graduates faced difficult choices about pursuing employment in Spain and the EU or returning to their home country after graduation, as some participants who stayed in their host country had difficulty finding jobs. Thus, due to the pandemic, some interviewees decided to return to their home countries instead of pursuing jobs in Spain (Rueff-Lopes et al., 2024). Xu (2022) uses autoethnography to describe their diasporic experience of looking for academic jobs in China following their graduate degree in the UK. The study reports on Covid-19 related difficulties in securing an academic job. Among other factors, such as university prestige, increased competition from other returnees and administrative delays in finalising an employment offer, Covid-19 made securing an academic job more difficult. Challenges associated with securing academic jobs in Australia during Covid-19 are also documented (Gomes, 2022). Another study found that perceptions of available job opportunities shaped the desire of Chinese students to return to China post-graduation during Covid-19, with Chinese students who had a positive perception of job availability in China being more likely to return (Zhang et al., 2022).

Expectations about career prospects

Some studies collected data from international students about their expectations for future employment and career prospects. In some studies, international students report optimism about future career prospects despite Covid-19 (Al-Qadri et al., 2022; Tong et al., 2022), while in others they express anxiety. Optimism about career prospects is tied to the international students' perception that the language skills acquired during their programmes will help them secure jobs following graduation (Al-Qadri et al., 2022). But most studies that investigated future career expectations among international students during Covid-19 indicate high levels of anxiety about future career prospects (e.g. Hari et al., 2023; Hari & Wang-Dufil, 2023; Morris et al., 2020; Tefera et al., 2023). International students were less optimistic than domestic students about future job prospects

(Anas et al., 2022). In a US-based qualitative study, one international student said they were delaying their graduation to increase their chances of getting a job (Koo, 2021). In another study, international students saw conducting their mobility online remotely as a means to increase job security because they could continue their current jobs while studying (Dos Santos, 2022).

Labour market policies and regulations with implications for labour market outcomes

A number of studies discussed policy changes and labour market regulations that affected international students. Most of these studies focused on single country cases and on English-speaking contexts. One study used a comparative approach to discuss policy evolutions in Canada and the US (Buckner et al., 2022). The US employed a strong anti-international student rhetoric and threatened a tightening of visa terms during the pandemic. This rhetoric negatively impacted international students (Park & Shimada, 2022), even if visa changes were not implemented (Buckner et al., 2022). Canada eased work restrictions for international students and loosened conditions for post-graduation work permits (Brunner, 2022; Buckner et al., 2022; Garcia-Sitton, 2024). International students were also encouraged to work in jobs in essential services, such as health care (Garcia-Sitton, 2024). Yet qualitative insights show that employment challenges persisted for international students in Canada who were not residing in the country and for those who had caring responsibilities (Fandino & Benerjee, 2022). The Canadian experience sits in contrast to the case of Australia, where international students who lost their jobs during the pandemic were excluded from the temporary financial assistance that was made available to permanent residents (Ramia et al., 2022). In European countries, delays in obtaining visas were reported for multiple populations, including international students (Farnell et al., 2021). Employment conditions for international students also shifted during the pandemic. For example, Belgium, France, and Ireland increased the maximum number of hours international students from non-EU countries were allowed to work (Farnell et al., 2021), but it is unclear if international students in these countries were able to secure work. Future studies that look at how Covid-19 has impacted international students should consider the national policy shifts during this time. Stronger collaboration between companies and HEIs is desirable to adapt to changes in disruptive times (Grebe, 2024).

Summary of labour market impacts before, during, and after the mobility period

Traditionally, studies that look at the relationship between study abroad and the labour market focus on post-graduation outcomes after the mobility period. However, in the literature documenting how Covid-19 affected international students, increased attention was given to employment experiences during mobility. Covid-19 struck international students at various stages of their mobility and in their studies. International students who were located abroad or were about to travel abroad saw the terms of their visa and work conditions changed and the employability opportunities available to them reduced. Students who recently returned to their home countries were seeking employment in a changed labour market. These aspects were reflected across the 35 studies included for analysis in this review. Table 3 illustrates how the various labour market outcomes discussed in this scoping review map onto the study abroad cycle.

Table 3 Impact of Covid-19 on labour market outcomes for international students

		Documented or expected labour market impact		
		Before mobility	**During mobility**	**After mobility**
Stage of mobility during Covid-19	Before mobility	● Changes in visa terms and work allowance (Farnell et al., 2021; Buckner et al., 2022; Garcia-Sitton, 2024). ● Choice of ISM shaped by perceived employability outcomes (Dos Santos, 2022)		
	During mobility		● (Language) skill acquisition impacted by online learning (Koo & Jiang, 2022), access to technology (Maqbool et al., 2022), and residency status (Weilage & Maráz, 2022) ● Skill acquisition promoted by virtual ISM (Beaubois et al., 2022; Kanamori et al., 2022; Ndubuisi et al., 2022) ● Limited professional development opportunities, including internships, during studies (David et al., 2023; Hari et al., 2023; Park & Shimada, 2022; Sustarsic & Zhang, 2022; Tefera et al., 2023) ● Loss of employment and working hours (Ullah & Harrigan, 2022; Hastings et al., 2023; Malet Calvo et al., 2022; Ramia et al., 2022; Whatley & Fischer, 2021)	● Positive perception about future career prospects (Dos Santos, 2022; Al-Qadri et al., 2022; Tong et al., 2022) ● Negative perception about future career prospects (Anas et al., 2022; Hari et al., 2023; Hari & Wang-Dufil, 2023; Morris et al., 2020; Tefera et al., 2023) ● Changes in post-study work authorisation procedures (Buckner et al., 2022; Garcia-Sitton, 2024)
	After mobility			● Decision to return shaped by perception of labour market prospects (Rueff-Lopes et al., 2024; Zhang et al., 2022) ● Challenges securing academic employment (Gomes, 2022; Xu, 2022).

Recommendations for practice and policy

Recommendations for practice were included in 16 of the studies examined. Some of these studies suggest that HEIs should offer additional language support for international students who study online (Koo & Jiang, 2022). To encourage students to remain in their host country following graduation, HEIs can support students in finding domestic internships (Rueff-Lopes, 2024) and facilitate employability-related activities and networking events (Weilage & Maráz, 2022). HEIs also have a responsibility to work with national governments to revise restrictive visa regimes, or their restriction during times of external shocks such as pandemics (Tefera et al., 2023).

Ten of the 35 studies included policy recommendations. Policymakers were encouraged to strengthen working rights for international students (Hastings et al., 2023; Park & Shimada, 2022; Ramia et al., 2022), particularly for vulnerable students (Tefera et al., 2023). Some studies underlined that governments should also ensure access to social

welfare support for international students in times of crisis (Hari et al., 2023; Ramia et al., 2022). Job creation and employment support initiatives to recruit returnee students were also suggested by existing studies (Maqbool et al., 2022; Zhang et al., 2022).

Limitations of the scoping review

This scoping review aimed to identify findings that emerge from studies focused on ISM, labour market outcomes, and Covid-19. There are several limitations to our analysis. First, the analysis and conclusions of our review are limited by the state of the academic literature at the time the scoping review was conducted. Currently published studies do not offer indications about the impact of Covid-19 on earnings, international career outcomes, or post-graduation employment of international students. Causal evidence is also missing. While a few studies compare outcomes of international students with other students (Marczuk & Lörz, 2023) or offer comparisons between groups of international students (Weilage & Maráz, 2022), the majority of studies do not include a control or comparison group. Second, this scoping review only includes publications in English. This means that research published in other languages is not represented here. This language inclusion criteria represents an area of bias in our scoping review and future reviews should focus on documenting findings published across a wider range of languages.

Discussion

Key findings

The evidence reviewed in this study suggests that Covid-19 weakened the relationship between ISM and labour market outcomes through a range of channels. In doing so, it underlines the importance of temporality in affecting international students' experiences and outcomes.

Previous literature documents that one of the mechanisms through which ISM links to improved labour market outcomes is through foreign language acquisition (Di Pietro, 2022b; Netz, 2021). Evidence presented in this scoping review suggests that Covid-19 may have diminished foreign language skill acquisition among international students (Weilage & Maráz, 2022). This, moreover, was coupled with fewer opportunities for professional development, such as internships and employment during studies and job losses. When international students were able to obtain jobs during their period abroad, they often faced worsening employment conditions. While worsening conditions affected a wide range of social groups, available research suggests that they hit international students more strongly than home students and other types of visa holders. International students thus suffered a double whammy, as this happened at a time when their needs for work heightened. However, further empirical evidence that compares outcomes among different groups of students is needed to support this claim and to understand if these effects have been long lasting. While studies focused on labour market outcomes traditionally look at post-graduation outcomes after the mobility period, the body of literature reviewed in this paper exhibited a clear focus on the employment outcomes that students experience during their study abroad. Future studies should build on current evidence and investigate post-graduation labour market outcomes and their association with ISM.

Some of the studies included in this scoping review offer recommendations for practice and policy. In addition to facilitating employability related events, existing studies suggest that HEIs have a responsibility to work with national governments to prevent excessively restrictive visa regimes for international students. Policymakers are encouraged to strengthen working rights for international students. Studies underline that governments should ensure access to social welfare support for international students in times of crisis.

Towards a future research agenda

Considering the state of the literature summarised by this paper, there is considerable scope to develop future studies to research the link between ISM, Covid-19, and labour market outcomes. This includes analysing different types of outcomes and, in particular, there is a need to examine how Covid-19 has affected labour market outcomes such as earnings and employment. To explore these labour market outcomes and generate accurate estimates, rich survey data on higher education graduates that includes information on employment and wages, or student level data that is linked to administrative income or employment data, would be required. To enable comparison with mobile students unaffected by Covid-19, such data would also have to be available for numerous student cohorts and contain information on mobile versus non-mobile students. Furthermore, for some labour market outcomes, such as earnings or employment, it may be necessary to wait several years after graduation to obtain a fuller picture of long-term effects. Such research would add to current evidence that shows how complex student mobility patterns between countries are (Weber & Van Mol, 2023).

This scoping review suggests that the effect of Covid-19 on labour market outcomes may be not uniform. The studies reviewed suggest that factors such as region of origin (David et al., 2023; Tefera et al., 2023), social class (Hastings et al., 2023), residency status (Weilage & Maráz, 2022), and national policy changes during Covid-19, shaped the relationship between ISM and labour market outcomes during Covid-19. Undertaking analyses across key areas of heterogeneity, including gender, socio-economic status, country of origin and host country, field of study, mobility type, and study modality, will be important.

Recent studies have started to use Covid-19 as a natural experiment (see for example Prati & Mancini, 2021). Researchers can explore how differences across institutions, countries and regions, and policies (e.g. lockdown periods, travel limitations, online versus in-person learning regulations, residency status) have shaped labour market outcomes among international students. Student mobility has been an endeavour typically available to a self-selected group of participants. As a natural experiment, Covid-19 may allow ISM researchers to compare outcomes between students who applied to study abroad but were not able to do so due to travel restrictions with their peers who did not apply to study abroad.

There is also a need to better study the mechanisms through which Covid-19 may have affected labour market outcomes, including through its impact on skills development. Studies can build on current evidence to further investigate the impact of Covid-19 on language skills and intercultural skills. A more nuanced approach may be feasible using cohorts of students that participate in higher education programmes that have a compulsory short-term study abroad element within their studies. The outcomes of cohorts

within such programmes before and after Covid-19 could be compared to those specifically affected by the pandemic who had less contact with both home and other international students.

Existing studies conducted during the pandemic have attempted to evaluate the skills outcomes of online mobilities and international programmes, but more rigorous research is needed in this area. Online and hybrid mobility increased in scale and prominence as a result of Covid-19. This type of mobility is considered by many as more sustainable (Shields, 2019), although student associations have raised concerns regarding the substitution of physical mobility by virtual mobility, noting that they do not provide the same type of experience and benefits (Souto-Otero et al., 2023), though more evidence is required. There is emergent evidence that virtual mobilities may be linked to an increased likelihood to study abroad (Lee et al., 2022), but immigration intentions vary between students from different countries and socio-economic backgrounds (Mittelmeier et al., 2022). Future studies can also build on existing evidence regarding the effectiveness of blended learning (Buhl-Wiggers et al., 2022), taking into account the breadth of forms online opportunities can take and have taken during the pandemic (Farnell et al., 2021).

Finally, most studies in this scoping review relied on data collected from students. Data from other stakeholders, including employers, will be useful to better understand the importance of factors such as residency status (Weilage & Maráz, 2022) in the employment process.

Conclusion

Studies on the relationship between ISM and labour market outcomes have previously shown small to moderate positive associations between ISM and labour market outcomes. At the same time, previous research also highlights how temporality shapes this relationship. This study aimed to document what we know about the temporality dimension of Covid-19 in the broader literature on ISM and labour market outcomes. We summarised findings from 35 relevant studies published between 2020 and 2024. Collectively, these studies indicate that Covid-19 weakened the relationship between ISM and labour market outcomes before, during, and after the mobility period. Some evidence suggests that foreign language acquisition and other skill acquisition diminished for international students during Covid-19. Opportunities for internships and employment during studies were also negatively affected by Covid-19. Yet many gaps and limitations persist in the existent literature. Nonetheless, this paper suggests that in the event of future crises, governments and HEIs should continue to ensure the wellbeing of all groups, including international students.

Appendix 1: Database search syntax

Search strategy Web of Science

TS=("international student" OR "returnee" OR "international graduate" OR "study abroad student" OR sojourner OR "exchange student" OR "foreign student" OR "student mobility" OR "student migration" OR "student migrant" OR "degree mobility" OR "credit mobility" OR "short term mobility" OR "long term mobility" OR "short-term mobility" OR "long-term mobility" OR Erasmus OR Erasmus + OR "intra-regional mobility" OR

"south-south mobility" OR "north-south mobility" OR "south-north mobility" OR "student exchange" OR "placement abroad" OR "semester abroad" OR "year abroad")

AND

TS=("labour market" OR "labor market" OR earn* OR wage OR income OR salary OR employ* OR hiring OR hire OR promotion OR job OR work OR internship OR placement OR "work hour" OR career OR recruitment OR "economic return" OR "rate of return" OR "private return" OR unemployment OR skill OR competen* OR proficien* OR abilit*)

AND

TS=(pandemic OR coronavirus OR covid OR corona OR lockdown OR shut down OR shut-down)

Custom date: 2020-01-01 to 2024-02-02

Other restrictions: English language only.

Search strategy Scopus

(TITLE-ABS-KEY ("international student" OR "returnee" OR "international graduate" OR "study abroad student" OR sojourner OR "exchange student" OR "foreign student" OR "student mobility" OR "student migration" OR "student migrant" OR "degree mobility" OR "credit mobility" OR "short term mobility" OR "long term mobility" OR "short-term mobility" OR "long-term mobility" OR Erasmus OR Erasmus + OR "intra-regional mobility" OR "south-south mobility" OR "north-south mobility" OR "south-north mobility" OR "student exchange" OR "placement abroad" OR "semester abroad" OR "year abroad") AND PUBYEAR > 2019) AND (TITLE-ABS-KEY ("labour market" OR "labor market" OR earn* OR wage OR income OR salary OR employ* OR hiring OR hire OR promotion OR job OR work OR internship OR placement OR "work hour" OR career OR recruitment OR "economic return" OR "rate of return" OR "private return" OR unemployment OR skill OR competen* OR proficien* OR abilit*) AND PUBYEAR > 2019) AND (TITLE-ABS-KEY (pandemic OR coronavirus OR covid OR corona OR lockdown OR shut down OR shut-down) AND PUBYEAR > 2019)

Search strategy education research complete

AB ("international student" OR "returnee" OR "international graduate" OR "study abroad student" OR sojourner OR "exchange student" OR "foreign student" OR "student mobility" OR "student migration" OR "student migrant" OR "degree mobility" OR "credit mobility" OR "short term mobility" OR "long term mobility" OR "short-term mobility" OR "long-term mobility" OR Erasmus OR Erasmus + OR "intra-regional mobility" OR "south-south mobility" OR "north-south mobility" OR "south-north mobility" OR "student exchange" OR "placement abroad" OR "semester abroad" OR "year abroad") AND AB ("labour market" OR "labor market" OR earn* OR wage OR income OR salary OR employ* OR hiring OR hire OR promotion OR job OR work OR internship OR placement OR "work hour" OR career OR recruitment OR "economic return" OR "rate of return" OR "private return" OR unemployment OR skill OR competen* OR proficien* OR abilit*) AND AB (pandemic OR coronavirus OR covid OR corona OR lockdown OR shut down OR shut-down)

Field for search: AB

Dates: January 2020 - February 2024

Other restrictions: English language only.

Search mode: Boolean/Phrase

Search strategy ERIC

AB ("international student" OR "returnee" OR "international graduate" OR "study abroad student" OR sojourner OR "exchange student" OR "foreign student" OR "student mobility" OR "student migration" OR "student migrant" OR "degree mobility" OR "credit mobility" OR "short term mobility" OR "long term mobility" OR "short-term mobility" OR "long-term mobility" OR Erasmus OR Erasmus + OR "intra-regional mobility" OR "south-south mobility" OR "north-south mobility" OR "south-north mobility" OR "student exchange" OR "placement abroad" OR "semester abroad" OR "year abroad") AND AB ("labour market" OR "labor market" OR earn* OR wage OR income OR salary OR employ* OR hiring OR hire OR promotion OR job OR work OR internship OR placement OR "work hour" OR career OR recruitment OR "economic return" OR "rate of return" OR "private return" OR unemployment OR skill OR competen* OR proficien* OR abilit*) AND AB (pandemic OR coronavirus OR covid OR corona OR lockdown OR shut down OR shut-down)

Field for search: AB

Dates: January 2020 - February 2024

Other restrictions: English language only.

Search mode: Boolean/Phrase

Search strategy EconLit

AB ("international student" OR "returnee" OR "international graduate" OR "study abroad student" OR sojourner OR "exchange student" OR "foreign student" OR "student mobility" OR "student migration" OR "student migrant" OR "degree mobility" OR "credit mobility" OR "short term mobility" OR "long term mobility" OR "short-term mobility" OR "long-term mobility" OR Erasmus OR Erasmus + OR "intra-regional mobility" OR "south-south mobility" OR "north-south mobility" OR "south-north mobility" OR "student exchange" OR "placement abroad" OR "semester abroad" OR "year abroad") AND AB ("labour market" OR "labor market" OR earn* OR wage OR income OR salary OR employ* OR hiring OR hire OR promotion OR job OR work OR internship OR placement OR "work hour" OR career OR recruitment OR "economic return" OR "rate of return" OR "private return" OR unemployment OR skill OR competen* OR proficien* OR abilit*) AND AB (pandemic OR coronavirus OR covid OR corona OR lockdown OR shut down OR shut-down)

There is no option to select publication language.

Dates: January 2020 - February 2024

Search mode: Boolean/Phrase

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Author contributions

Author 1 led the scoping review process and was a major contributor in writing the manuscript. Authors 2, 3, 4, 5, and 6 reviewed abstracts for relevance, extracted information from relevant studies, and contributed to the writing of the manuscript. Authors 7, 8, 9, and 10 reviewed abstracts for relevance. Author 10 reviewed the references included in the article. All authors contributed to the conceptualisation of the study, read, and approved the final manuscript.

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Declarations

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