

Social Capital and Post-Graduation Destination: International Students in Ireland

Zizhen Wang*

University College Dublin

Philip J O'Connell

University College Dublin

Abstract: Drawing from social network theory, this study investigates the extent to which bonding and bridging social capital influence the likelihood of staying abroad or returning home after graduation among international students in Ireland. Bonding refers to co-national networks and is measured as the strength of ties and the abundance of resources with co-nationals or family members. Bridging implies crosscutting ties beyond one's co-national network and is measured as contacts with the locals or non-co-nationals. A survey was carried out among Irish university international alumni who graduated between 2014 and 2016. Our main findings suggest: (1) bridging social capital, particularly high-quality and with close bridging ties, are positively associated with the likelihood of staying abroad; (2) human capital, especially field of study and language ability, is positively associated with the likelihood of staying abroad. Policy implications are discussed.

I BACKGROUND

International students who travel to a country different from their own for the purpose of higher education comprise an important but under-explored group in the global migration literature (Findlay, 2011). International students tend to distance themselves from the traditional stigma of “migrants as a problem” and to self-identify as “international” or “visiting” scholars, and are referred to as such by their host institutions (King and Ruiz-Gelices, 2003). The growing internationalisation of education and economy encourages students to be more mobile to develop skills that are in demand in an increasingly global labour market for highly skilled

Acknowledgements: We wish to thank Johan Elmkink and Thomas Grund for their suggestions on the early stage of this research, and Douglas Proctor from UCD Global for his assistance in the data collection. We also wish to thank the three anonymous reviewers and Prof. Ross Macmillan for their valuable feedback. The authors are solely responsible for the content and the views expressed.

Corresponding author: zizhen.wang1992@qq.com

individuals. UNESCO (2018) estimates that there were over 4.8 million tertiary students enrolled in a country of which they were not citizens in 2016.

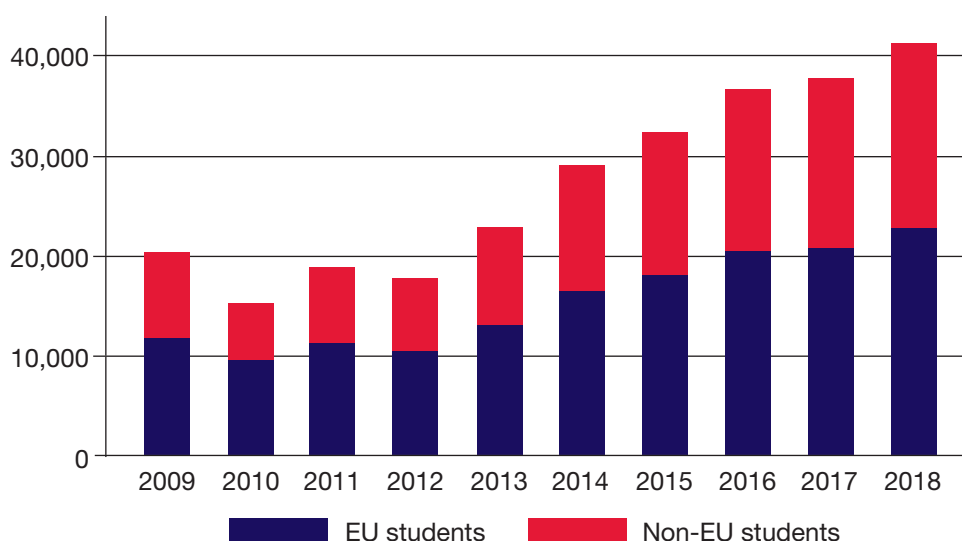
The trend for students to study abroad, particularly migrating from the developing to the developed countries, looks set to continue. Demographic and labour market changes in the last few decades, combined with the transition to the knowledge economy, have created substantial demand for highly-skilled workers in developed countries. Since policies for attracting highly-skilled foreign workers to the West are not always effective, due to factors such as long periods of adjustment to new environments, possible skill gaps between home and host country (Gingras and Roy, 2000; Reitz, 2001), and difficulties in recognition of foreign credentials (Bauder, 2003), host-country-trained international students are increasingly regarded as a significant source of skilled labour for Western societies. The retention of talented students can contribute significantly to the host country's labour market and economy, although this can result in *brain drain* from home countries (Kapur and McHale, 2005). Indian and Chinese PhD holders forming the scientific backbone of Silicon Valley and other high-tech production areas represent examples of this kind of skills transfer (Wong, 2006).

The decisions of international students to stay in the host country or return to their home country upon graduation have received much less scholarly attention than their initial migration choices. Most studies on international student migration have focused on the determinants of choices of study location (Mazzarol and Soutar, 2002; Naidoo, 2007; González *et al.*, 2011; Beine *et al.*, 2016). Few studies have produced estimates of rates of return migration, perhaps due to the challenge of obtaining relevant data. Where studies have looked at post-graduation location, most instead focus on students' *intentions* to stay or return (e.g. Hazen and Alberts, 2006; Baruch *et al.*, 2007; Soon, 2012). While it may be easier to collect intention data among university students than to locate internationally mobile graduates, the experience of migration and of living in another country often leads to modification of their initial plans. Thus, students' intentions at the time of university study may be poor predictors of actual migratory behaviour upon graduation. The present study seeks to fill this gap, drawing on a survey among Irish university alumni. It investigates the factors influencing international students' destination choice upon graduation on the basis of observed behaviour: that is *where they are now* or *where they were after graduation*, rather than where *they want to be in the future*.

Ireland is selected as a case study that represents important characteristics of a Western education system. Ireland is the host country of over 23,000 third-level international students (Higher Education Authority, 2018). Advantages such as being an English-speaking country, having highly-ranked universities, combined with successful global promotion, have led to Ireland becoming an emerging player in the international education market. Figure 1 presents the number of non-Irish full-time tertiary students enrolled in the Irish higher education system from 2009

to 2018.¹ We can clearly see a strong growth trend in the student numbers from both EU and non-EU countries in the past decade, although some fluctuations are evident during 2009 to 2012, possibly due to the post-2008 Irish economic downturn (Hazelkorn, 2014). The differentials between the numbers of EU and non-EU students are also gradually decreasing, indicating a successful global advertising and promotion of Irish universities outside Europe.

Figure 1: Number of Non-Irish Tertiary Students in Ireland (Full Time)



Source: Higher Education Authority (2018).

Furthermore, international applications to Irish universities surged strongly following the result in the UK referendum on membership of the European Union in 2016. For example, applications from non-EU students to University College Cork increased by 40 per cent in 2017 (*The Irish Times*, 2017). While existing studies on international student migration have primarily focused on the US, the UK and continental European countries, little research has been conducted on the Irish case. Studies of international student migration to and from Ireland have remained at the level of general statistical or administrative policy review (Gilmartin *et al.*, 2016; Higher Education Authority, 2016; Courtois, 2018). No peer-reviewed publication on the Irish case could be found at the time of writing this paper. In a context where the Irish Government has implemented policies to encourage international graduates to stay and work in Ireland upon graduation

¹ Data were retrieved from Higher Education Authority database, available at: <https://hea.ie/statistics-archive/>. Data prior to 2009 were not available.

(e.g. the extension of the Third Level Graduate Scheme from one year to two in 2017, and lowering minimum salary requirement for work permit applicants from €30,000 to €27,000 in 2019), our study is of timely importance.

The rest of the paper is structured as follows: Section II provides a comprehensive review of the literature on international student migration, and identifies two research gaps in the existing literature which this study aims to address, namely the impact of social capital on migration decisions and the use of observed migration behaviour, rather than migration intentions. Section III introduces the theoretical framework which guides the development of the research hypotheses. Section IV outlines the data collection process and the construction of the variables. Section V provides the results of data analysis and the final section concludes the study and draws policy implications.

II LITERATURE REVIEW

The literature on the determinants of international student migration can be broadly divided into two categories: studies on where to study, and studies on where students go upon graduation. Although this study focuses on the latter theme, we review both branches of the literature, since the motives and rationales for these two migratory decision-making processes share important similarities.

One of the earliest attempts to investigate student migration is Tuckman's study (1970) of internal student mobility in the US, which suggested that students are more likely to leave those states with higher per-capita income and higher tuition fees and stay in states where more public schools are available. Tertiary students as global migrants began to attract scholarly attention in the late 1990s. Pioneering works include King and Shuttleworth (1995), Jallade and Gordon (1997), Belfield and Morris (1999) and Murphy-Lejeune (2002). These studies primarily focused on student migration within the EU under the Erasmus programme. From the beginning of the twenty-first century, following the surge in the number of international students in Western countries, there has been a significant increase in empirical analyses of international student migration. British scholars including King (King and Raghuram, 2013; King and Ruiz-Gelices, 2003; Sondhi and King, 2017), Findlay (Findlay, 2011; Findlay *et al.*, 2012), Brooks and Waters (2009; 2010; 2011) and Waters and Brooks (2010; 2011) are some of the leading researchers in this field of study, conducting substantial studies investigating the inflow of international students into the UK as well as the outflow of British students.

2.1 Neo-classical and Social Network Approaches

Empirical research on the post-graduation destination choices of international student migrants is an emerging field. The neo-classical theory and push-pull model

seem to prevail in the economic studies of international student migration upon graduation. Hazen and Alberts (2006) explored intentions to stay or return among 185 international students in the US upon graduation and found that economic and professional factors typically dominate among incentives to stay, while personal and societal factors tend to draw them back home. Baruch *et al.* (2007) also found that a positive perception of the host country's economy often leads to a desire to stay in the host country on the part of international students. Using European-wide survey data, De Grip *et al.* (2010) found that wage levels and the intensity of research and development (R&D) in the destination country, as well as the previous migration experience of parents, significantly increase international graduates' likelihood to migrate. Moreover, Soon (2012) examined post-graduation destination choices among international students in New Zealand. She found that doctoral and health science students are less likely to plan to return home while students with a strong familial support are more likely to do so. Constant and D'Agosto (2010) also found that having a foreign doctoral degree significantly increases Italian students' probability of staying abroad.

Scholarly attention has also been drawn to the non-economic factors in students' migration decision-making. Using a qualitative approach, Guth and Gill (2008) explored the emigration of Polish and Bulgarian doctoral scientists. They concluded that rather than being economically driven in the traditional sense of moving to earn more, key pull factors motivating students' emigration included science expenditure, available positions, and prestige of institutions in the host country; while under-investment in home countries' research and development (R&D) acted as a push factor. Studies have also found that previous experience of studying abroad increases students' probability of working abroad upon graduation (Parey and Waldinger, 2010; Oosterbeek and Webbink, 2011). Although the social network approach to migration gained popularity in the general international migration literature in the 1980s (Hugo, 1981; Boyd, 1989), it was only introduced into the international student migration literature in the 2010s. Prominent studies that focus on the social network or social capital aspect of student migration include Collins (2008), Brooks and Waters (2009) and Beech (2015). Criticising individualised approaches to transnational mobility, Brooks and Waters (2009) argued that decisions about migration for work or study are strongly embedded within social relationships – with parents and other family members; with friends at school, college, work or overseas; and with boyfriends, girlfriends and partners. Beech (2015) also emphasised the profound role of social networks in international student mobility. However, these studies remain qualitative and exploratory.

King and Sondhi (2018) set out to theorise international student migration. They proposed four theoretical frameworks, which conceptualise international student migration (1) as a subset of highly skilled migration, (2) as a product and an underlying mechanism of the globalisation of higher education, (3) as part of global youth mobility culture, and (4) as a means of constructing an elite class category.

General reviews of the theoretical and policy aspects of international student migration can be found in Brooks and Waters (2011) in the European context and Guruz (2011), Alberts and Hazen (2013) in the US context. A review with a special focus on the economic perspective of student migration is offered by Gérard and Übelmesser (2014).

2.2 Literature Gaps

In this study we address two gaps found in the literature. Firstly, the mechanisms through which social capital influences international student migration is not fully researched in the existing literature. Economic studies (e.g. De Grip *et al.*, 2010 and Oosterbeek and Webbink, 2011) tend to focus primarily on monetary and human capital determinants and ignore the important role social capital plays in international migration, which sociologists have been emphasising since the 1990s (Massey *et al.*, 1999). Although several studies reviewed above (e.g. Brooks and Waters, 2010; Beech, 2015) did consider social capital and networks as an important factor influencing international student migration, their methodologies were mostly qualitative, and the findings remained conceptual and ungeneralisable. In Soon (2012), the location of family members was used as the measure of social network, however other types of network, such as friendship networks, were ignored. Indeed, an individual's social capital is not only confined within family. Particularly in a migratory context, people you know outside of your family may be even more important since they can provide you with information that is not available within the family network. Accordingly, students who have many host country friends and strong academic relations in the host country may choose to stay upon graduation.

Secondly, most quantitative research on international students' destination choice upon graduation discussed above used survey data conducted among university students, so the findings were related to migration intentions rather than observed behaviour. Although students' migration intentions are useful indicators of future migration decisions and can, to some extent, provide insights into the factors that students take into account in decision-making, the experience of migration and of living in another country often leads to modification of earlier plans. So, students' intentions at the time of study may be poor predictors of actual behaviour after graduation. Those who initially planned to stay upon graduation may fail to find a job in the host country and eventually return home.

In an attempt to address these research gaps, this study contributes to the literature in three aspects. Firstly, detailed social network data were collected in a survey of international alumni in order to better understand how social capital influences international students' migration behaviour. Each individual graduate's stock of social capital was measured in two types of networks, which are friendship network and family network. Moreover, two forms of social capital – bonding and bridging – were distinguished in order to explore how different forms of social capital influence international graduates' migration decision-making differently.

Secondly, in order to avoid divergence between intention and reality, the survey was conducted among recent university graduates. By collecting data from recent graduates instead of current students, their actual location after graduation was recorded: this is the key dependent variable in the analysis. Lastly, this study provides the first empirical research on international student migration behaviour in the Irish context. Investigating international students' study-to-work transitions and their migratory patterns upon graduation is of critical importance in the post-Brexit era when Ireland is expecting to receive significantly more foreign students in the coming years.

III THEORIES AND HYPOTHESES

We draw on both social capital and human capital theories to explore the factors influencing international students' destination choices upon graduation in this study.

3.1 Social Capital Theory

In the past few decades, social capital has gained currency in sociology as well as other fields of social science as a paradigm for capturing the contributions of social elements to explain a wide variety of individual and collective behaviour (Lin and Erickson, 2010). Its research saliency reflects the recognition by many academic scholars that collective and individual actions significantly depend on the social context in which such actions are embedded (Granovetter, 1985; Portes and Sensenbrenner, 1993), especially in the field of international migration (Portes, 1998; Massey *et al.*, 1999), educational achievement (Bourdieu, 1986; Coleman, 1988), labour market performance (Granovetter, 1973; 2018; Bian, 1997) and health (Kawachi *et al.*, 1999; 2000).

Current theoretical debates conceptualise social capital in two different approaches. In the individualistic approach, the focus is on the use of social capital by individuals – how people access and use resources embedded in their social networks for purposive actions (Lin, 1999a). Scholars adopting this perspective are often interested in how individuals invest in social relations and capture the embedded resources in the relations to generate a return (Bian, 1997; Flap and Volker, 2004; Lin, 1999a; 1999b). Another perspective has its focus on social capital at the group level. In this perspective, social capital is conceptualised as the emergent properties of social networks – such as trust and reciprocity – that provide the social control and solidarity that facilitate coordinated actions and the pursuit of “shared objectives” and thus enhance collective well-being (Coleman, 1988; Putnam, 1995). While acknowledging the importance of individuals interacting and networking in developing payoffs from social capital, the central interest of this perspective is to explore the elements and processes in the production and maintenance of the collective asset.

In a migratory context, it is the particular circumstance of foreignness that migrants feel in new and unfamiliar surroundings that may generate a heightened sense of collective consciousness and feelings of greater affinity with their own ethnic group. In this study, we do not analyse the social capital effects of the “immigrants’ community” as such, but rather focus on its influences on the individuals. Despite the different level of conceptualisation, one of the key common insights among different theories is that social relations can generate material benefits. Among the group of activities pointed out by the literature as related to different dimensions of social capital, some are linked to activities carried out during leisure time or centred on social participation, such as volunteer work (Wilson and Musick, 1997), active involvement in community-based associations (Ginwright, 2007) or frequent social contacts with friends, family or neighbours (Kanas *et al.*, 2012). All these activities could potentially enrich student migrants’ networks of co-national and cross-national social contacts.

In the current study, in order to address the effects of social capital in different types of network, we measure social capital separately in friends and family networks. In friends networks, we focus particularly on the differential effects of bonding and bridging social capital on migration decision-making. While the existing research provides a convincing picture of social capital’s function in predicting migration choices using the push-pull model (e.g. Doerschler, 2006), few research studies have empirically tested the related roles of the two commonly discussed dimensions of bonding and bridging social capital in the literature of international student migration. Drawing on Putnam (1995), bonding social capital refers to within-group connections, while bridging social capital refers to between-group connections. In the international migration literature, bonding social capital often refers to the available resources embedded in one’s co-national or co-ethnic networks, while bridging social capital implies network resources in ties with local people or other immigrants not from one’s national/ethnic background (Nannestad *et al.*, 2008). The advantage of bridging ties is that they can provide access to information and resources that are often not available in one’s bonding networks. It is well established in the literature that for immigrants, contacts outside of one’s co-national or co-ethnic networks are important cross-cutting ties and can result in better labour market outcomes (Portes 1998; Heath and Yu 2005; Haug 2008).

We expect that international students who possess more bridging social capital can access more diverse information and resources through intercultural networks which may help them stay and find jobs in the the host country. Possessing more bridging social capital may also imply better language ability and better cultural integration, which also helps students settle in the host country. On the other hand, possession of more bonding social capital indicates strong relations with co-national/-ethnic friends. Bonding networks contain more homogeneous and redundant information which are less useful than intercultural networks in getting jobs (Lancee, 2010). Students having more bonding social capital may also reflect

weak language ability for intercultural communication and poor integration in the host society.

As for family networks, studies have shown the strong pull effect of family members, enticing students to return to their home country (Brooks and Waters, 2010). Thus, it is proposed that:

Hypothesis 1: Possession of more bonding social capital increases the likelihood of returning home while possession of more bridging social capital increases the likelihood of staying abroad.

Hypothesis 2: Strong family social capital from the home country increases the likelihood of returning home.

3.2 Human Capital Theory

Modern theory of human capital, popularised by neoclassical economists including Mincer (1958), Schultz (1961) and Becker (1964), suggests that individuals and societies derive economic benefits from investments in people. Human capital is defined by Becker (1964) as the stock of knowledge, skills and experience, embodied in the ability to perform labour so as to produce economic value. Sjaastad (1962) first introduced the human capital concept into migration by arguing that migration is an equilibrating mechanism for relocating resources and increasing the productivity of human resources in a changing economy. Under the paradigms of methodological individualism and rational choice theory, this stream of literature views international migration as a sum of individual cost-benefit decisions undertaken to maximise expected income through international movement (Sjaastad, 1962; Todaro, 1969, 1976; Todaro and Maruszko, 1987). Consequently, immigrants are often seen as individual enterprises who embark on a journey to explore possible ways to maximise their utilities by crossing from one country to another.

In the case of international students, following the assumption of human capital theory that people migrate to where their human capital can generate the greatest economic returns, we would expect that most students will stay and work in Western host countries since jobs in host developed countries are generally much better-paid than those in home developing countries. However, this is not the case. Statistics from the OECD (2013) show that less than 25 per cent of international students stayed in host OECD countries upon graduation. Studies have revealed that language barriers, lack of host country work experience and skill devaluation or non-recognition are among the main factors impeding international graduates' employment in the Western host countries (Dustmann and Fabbri, 2003; Kofman and Raghuram, 2006). Therefore, there may exist a minimum level of human capital required to secure employment if graduates wish to stay and work in Western host countries: those whose skills are insufficient to find a job upon graduation in the host country often end up returning home.

Thus, we propose that:

Hypothesis 3: Possession of more human capital increases the likelihood of staying in Western host countries.

IV RESEARCH DESIGN

4.1 Data Collection

Since there are no appropriate datasets available that suit the purpose and scope of this study, an original micro-level dataset was constructed using an online survey platform to conduct a survey on a sample of Irish universities' international graduates. The data were collected over a period of five months, from October 2017 to February 2018. The target population was non-EU/EEA/Swiss Confederation (non-EU henceforth) graduates of Irish universities who graduated between 2014 and 2016. Although graduates from EU countries can be considered as migrants, given their international mobility, they are excluded from this study because current EU regulations on free movement allow them to move freely and to work across the EU, so the regulations governing their mobility and employment differ significantly from those faced by non-EU graduates. As discussed above, graduates are targeted instead of current students because people's intentions regarding migration and actual behaviour can differ significantly. The time period of three years post-graduation was chosen because earlier graduates may find it difficult to recall details of their human and social capital when answering the questionnaire.

Data published by the Higher Education Authority (2018) indicate that a total of 10,706 non-EU students graduated from Irish universities during the years 2014 to 2016. The sampling frame used here consists of the email lists of 2014 to 2016 international alumni maintained by the alumni offices of all seven Irish universities. In order to reach the target population, the alumni offices of all seven universities in Ireland were contacted. After rounds of negotiation, only two institutions, University College Dublin and Dublin City University, agreed to distribute the survey among their international alumni. To improve the sample size, a snowball sampling method was also used to increase the sample size by asking questionnaire participants to forward the survey link to other international students of their acquaintance who had graduated from an Irish university in the 2014-2016 time-frame. The final usable sample size was 325 graduates. These comprised 179 responses from UCD (54.4 per cent), 109 from DCU (33.3 per cent), and the rest from Maynooth University (1.2 per cent), University of Limerick (6.4 per cent) and Trinity College Dublin (4.6 per cent). Among them, 31 per cent are Chinese, 31 per cent are Asians other than Chinese, 7 per cent are Latin American, 19 per cent are African, and 10 per cent are North American, Oceanian or non-EEA Europeans. We compare our sample with the graduate data provided by HEA.

Among all the non-EEA graduates from Irish third-level institutes in 2016-2017, 53 per cent are Asian, 9 per cent are Latin American, 14 per cent are African and 23 per cent are others. Thus, we are confident our sample maintains a good representativeness of non-EEA graduates in Ireland. Our Irish data also show good similarity with EU data on international students, in which Asia and Africa are the top two international students' domiciles of origin.²

4.2 Constructing Variables

The dependent variable is the location of the graduate's first job after graduation from their host Irish university. Four options were provided: Ireland, other EU countries except Ireland, home country, and others, please specify. In our sample, 168 (52 per cent) international graduates' first jobs were located in Ireland, 14 (4 per cent) in other EU countries except Ireland, 121 (37 per cent) returned to the home country, and eight (3 per cent) went to other countries including US, Singapore and Canada. Fourteen (4 per cent) graduates have not been employed since graduation due to parenting, pregnancy or disability. Table 1 presents the descriptive statistics for the dependent variable with a cross-tabulation of students' place of origin.

Table 1: Summary Statistics of International Students' Destination Upon Graduation

| | <i>Home country</i> | <i>Ireland</i> | <i>Europe except Ireland</i> | <i>Other Places</i> |
|--|-------------------------|----------------|--------------------------------------|-------------------------|
| Chinese | 63 | 27 | 5 | 2 |
| Other Asians except Chinese | 36 | 60 | 1 | 0 |
| Latin American | 3 | 20 | 0 | 0 |
| African | 19 | 35 | 4 | 2 |
| North American, Oceanian, non-EEA European | 0 | 26 | 4 | 4 |
| Number | 121 | 168 | 14 | 8 |
| Total Percentage | 37 | 52 | 4 | 3 |

Source: Authors' analysis.

Note: The 14 graduates (4 per cent) who had been unemployed since graduation are not included in the Table.

Since the dependent variable is a four-outcome variable, ideally a multinomial logit model could be applied. However, this solution is less attractive, as it would result in too few cases to reliably estimate parameters for the "other European countries except Ireland" and "others" categories. Given that this study focuses primarily on the difference between those who returned home and those who stayed abroad, we

² See Eurostat: https://ec.europa.eu/eurostat/statistics-explained/index.php/Learning_mobility_statistics.

decided to re-categorise the four outcomes into two: first job in home country versus first job not in home country. In terms of this binary dependent variable, 121 (37 per cent) international graduates in the sample returned home to work after graduation while 190 (59 per cent) stayed abroad for their first job.

The key independent variables in this study are international graduates' social and human capital. It is important to note that all the human and social capital items are time-specific, measuring human and social capital graduates possessed at the time of graduation, not the time of answering the survey.

4.2.1 Social Capital Variables

Social capital was measured in two different types of networks; friends and family networks. For friends networks, three five-item scales were used to measure bonding social capital with co-nationals, bridging social capital with Irish, and bridging social capital with people who were neither co-national nor Irish (they are referred to as *other internationals* henceforth). The scale for bonding with co-nationals consisted of four items that measure: (1) network extensity (*most of my friends were from my own country*), (2) frequency of social contact (*I used to hang out with co-national people*), (3) involvement in organisations (*I was a member of organisation/club which predominantly consisted of people from my own country*), and (4) psychological preference and trust (*I felt more comfortable to socialise with /I preferred to seek help from co-nationals*). These four dimensions have often been used in the literature as proxies of social capital. The scale for bridging with Irish and with other internationals consisted of five items that were similar to the bonding measures, but the object of the relationship was changed to Irish and other internationals. Although international students' network ties with Irish and with other internationals were both bridging, the rationale for separating Irish from other internationals was to treat them as advantaged local network resources which may provide host-country-specific information that is difficult for foreigners to access.

For the family network, participants were asked about their relationship status,³ partner's nationality, partner's location, whether the respondent had children and where they resided, as well as where their parents resided during their study in Ireland. In fact, there are lots of missing values for these three variables—partner's nationality, location of partner and location of children—since those who did not have a partner or children by the time of graduation skipped the questions. Accordingly, in order to understand the effect of family social capital on student's migration choices and to avoid substantial data loss, a new variable measuring *family social capital from home country* was constructed. This variable sums the four dummy variables, consisting of partner's nationality, location of partner,

³ Instead of asking marital status, our questionnaire asked if one was partnered or not by the time of graduation, and boyfriends or girlfriends were explicitly included. It is believed that even though not married, a stable romantic relationship can influence one's destination choice upon graduation.

location of children and location of parents and it represents the pull effect of family from home country. It ranges from zero to four. Zero indicates no pull effect from home country while four indicates the strongest pull effect from home.⁴

4.2.2 Human capital variables

International graduates' human capital was measured in three dimensions: education, language ability and experiences. Education was measured by asking the graduate's level of degree, field of study, and the university from which they graduated. In the analysis, field of study was dichotomised into science, technology, engineering and mathematics (STEM) versus all other fields, and university was divided into whether the university is based in Dublin or not. We distinguish STEM disciplines because we expect that graduates in these fields may enjoy greater demand in the labour market (see Han *et al.*, 2015). The rationale for identifying Dublin universities stems from the assumption that the dynamic and vibrant labour market in the Irish capital city confers advantages upon Dublin-based graduates in seeking employment. Also, it takes into the account the influence of university rankings on international graduates' destination, since, on average, universities in Dublin are ranked higher than those located outside of Dublin. English ability was measured by asking graduates to self-evaluate their listening, speaking, writing and reading English ability (each on a five-point scale). Experience includes years of work experience and number of internships.

4.2.3 Control Variables

A number of control variables were also included: age, gender, parents' highest education, original plan upon graduation before coming to Ireland, number of years living in Ireland by the time of graduation, and nationality. In line with previous studies, females are expected to be more likely to return home than males and older students are more likely to return home than younger ones. Parents' highest education is used as a proxy of students' family background. Graduates with original plans of returning home upon graduation are expected to be more likely to return home than those who had intended to remain abroad or those who did not have clear plans. Numbers of years living in the host country may also influence graduates' destination choice. It is expected that the longer students live in Ireland, the more likely they would be to stay and work here upon graduation. Nationality is re-categorised into five areas of origin: Chinese, other Asian except Chinese, Latin American, African, and others (which includes North American, Oceanian and non-EU European). Among the six control variables, gender, parents' highest education and original career plan are dummies; and age, years spent in Ireland and

⁴ In terms of the coding, partner's nationality: 1 co-national, 0 non-co-national; location of partner/children/parents: 1 home country, 0 abroad. For example, someone scoring four means his/her partner is co-national and his/her partner, children and parents were all living in the home country during his/her study in Ireland.

nationality are continuous or categorical variables. Summary statistics for all explanatory variables are shown in Table 2.

Table 2: Summary Statistics for All Explanatory Variables

| <i>Explanatory Variables</i> | <i>Mean</i> | <i>Range</i> | <i>Std Dev.</i> |
|---|-------------|--------------|-----------------|
| <i>Social Capital</i> | | | |
| Bonding social capital with co-nationals | 15.87 | 5-25 | 6.53 |
| Bridging social capital with Irish | 10.86 | 5-25 | 4.80 |
| Bridging social capital with other internationals | 16.42 | 5-25 | 5.99 |
| Family social capital from home country | 1.49 | 0-4 | 0.81 |
| <i>Human Capital</i> | | | |
| Major (STEM) | 0.36 | 0-1 | 0.48 |
| University (Dublin-based) | 0.59 | 0-1 | 0.49 |
| English ability | 14.55 | 5-20 | 4.22 |
| Years of work experience | 1.09 | 0-11 | 2.00 |
| Internship | 0.49 | 0-3 | 0.69 |
| Degree | Observation | Percentage | |
| Bachelor | 45 | 0.14 | |
| Master | 149 | 0.46 | |
| Doctorate | 131 | 0.40 | |
| <i>Control Variables</i> | | | |
| Gender (Male) | 0.47 | 0-1 | 0.50 |
| Age | 26.53 | 20-37 | 4.48 |
| Original plan of not going back | 0.56 | 0-1 | 0.50 |
| Parents' highest education (Tertiary) | 0.40 | 0-1 | 0.50 |
| Years living in Ireland | 2.73 | 1-9 | 1.79 |
| Origin | Observation | Percentage | |
| Chinese | 101 | 0.31 | |
| Other Asian except Chinese | 103 | 0.32 | |
| Latin American | 23 | 0.07 | |
| African | 65 | 0.20 | |
| Others | 35 | 0.11 | |

Source: Authors' analysis.

V FINDINGS

5.1 Bonding vs Irish Bridging vs Other Internationals Bridging

Table 3 presents a logistic regression model of the likelihood of returning home or staying abroad. The explanatory variables include measures of bonding social capital with co-nationals, bridging social capital with Irish, and bridging social capital with other internationals, as well as the human capital and control variables.

**Table 3: Logistic Regression Predicting the Likelihood of Staying or Returning
Bonding vs Irish Bridging vs International Bridging**

| | <i>Odds Ratio</i> | <i>SE</i> |
|---|-------------------|-----------|
| Bonding social capital with co-nationals | 0.89* | 0.04 |
| Bridging social capital with Irish | 1.05 | 0.07 |
| Bridging social capital with other internationals | 1.31*** | 0.47 |
| Family social capital from home country | 1.34 | 0.25 |
| Degree | | |
| Bachelor | Ref. | |
| Master's | 0.40 | 0.21 |
| PhD | 0.81 | 0.55 |
| Field of study (STEM) | 3.81* | 2.58 |
| University (Dublin-based) | 1.81 | 1.64 |
| English ability | 1.21* | 0.10 |
| Work experience | 1.14 | 0.19 |
| Internship experience | 0.59 | 0.18 |
| Gender (Male) | 0.63 | 0.10 |
| Age | 0.98 | 0.10 |
| Original plan of not going back | 3.48** | 1.81 |
| Parents' highest education (Tertiary or above) | 1.15 | 0.52 |
| Years in Ireland | 0.78 | 0.13 |
| Origin | | |
| Chinese | Ref | |
| Other Asian except Chinese | 1.18 | 0.65 |
| Latin American | 1.76 | 1.48 |
| African | 0.08** | 0.06 |
| Others | – | – |
| Constant | 0.002 | |
| Log-likelihood | –87.22 | |
| Observation | 270 | |
| Pseudo R ² | 0.52 | |

Source: Authors' analysis.

Note: *p<0.05, **<0.01, ***<0.001. Odds ratios and standard errors are reported.

Among the measures of social capital, bonding social capital with co-nationals and bridging social capital with other internationals showed significant effects on students' destination choices. Possessing more bonding social capital increases the likelihood of returning to home country while possessing more bridging social capital with other internationals increases the likelihood to stay abroad upon graduation. These effects are as we expected, and they support Putnam's argument that bonding social capital, though providing high levels of solidarity and

enforceable trust, provides one with less new and non-repetitive information that is useful in settling down or finding a job than bridging social capital does. We expected that bridging social capital with Irish people would provide international students with more host-country-specific information which could help them find employment or settle in Ireland upon graduation. However, while the effect of bridging social capital with Irish was positive, as expected, it did not achieve statistical significance. This might be due to the low variance of the Irish bridging variable (see Table 2). Moreover, family social capital from the home country was also found to have no significant effect on the likelihood of staying or returning. It may be that at the early stage of one's career, the pull effect of family from home may not have a strong influence on the location of one's first jobs.

Among the human capital items, both majoring in a STEM field and English language ability are associated with higher likelihood of staying abroad upon graduation. The odds of staying abroad upon graduation are 3.8 times higher among STEM graduates compared to non-STEM graduates. This finding is consistent with the existing literature (Han *et al.*, 2015). We suspect the reason is twofold. From the individual perspective, science graduates are generally more employable than humanity and social science graduates (Coll and Zegwaard, 2006; O'Leary, 2013), especially in the era of the globalised and technological economy. The new economy seems to require highly technical skills since it is based on the spread of computers and information technology throughout the workplace. From the institutional perspective, to retain global talents and boost its economy, Ireland has made it easier for STEM graduates to stay and work in Ireland by introducing the Critical Skills Employment Permits Scheme. Occupations such as ICT (Information and Communications Technology) professionals, professional engineers and technologists are catered for under this type of employment permit.

As for the controls, among those who originally plan not to return after graduation or did not have a clear plan, the odds of remaining abroad are almost 3.5 times larger than among those planned to return before coming to Ireland. It is possible that students who originally planned not to return are those who are not satisfied with their home country, either economically or societally, and they use the opportunity of studying abroad to enhance their prospects of longer-term settlement abroad. Future qualitative research could explore this further by examining the rationale for why some students plan not to return, and others do, before they leave their home country. In this context, it is interesting that African students are found to be much more likely to return home than the reference group, Chinese students. There are no significant effects observed for age, gender, years in Ireland or parents' educational level.

5.2 Bonding vs Bridging

In Table 5, we further disaggregate our social capital variables in order to investigate Portes' (1998) argument that Bourdieu's (1986) concept of social capital entails

two components: first, the number of social relationships that allow individuals access to resources controlled by their associates; and second, the quality of resources and closeness of ties. The elements of these two components of social capital are set out in Table 4. To simplify the analysis, we combine the measures of Irish and international networks into a single measure of bridging social capital. Model 1 replicates the model reported in Table 3, but with the single measure of bridging social capital. Model 2 explores the interaction effect between social and human capital on the likelihood of staying or returning. Model 3 shows the results of disaggregating both bonding and bridging social capital into their quantitative (number of ties) and qualitative (resources and closeness) components.

Table 4: The Items Used to Measure Different Components of Bonding and Bridging Social Capital

| | | |
|-----------------|-------------------------------|--|
| <i>Bonding</i> | <i>Numbers of ties</i> | Most of my friends were from my own country. I was a member of organisations/clubs which predominantly consist of people from my own country. |
| | <i>Resource and closeness</i> | I used to hang out with friends from my own country. I felt more comfortable to socialise with friends from my own country. I preferred to seek help from friends from my own country. |
| <i>Bridging</i> | <i>Numbers of ties</i> | I had lots of local Irish friends. I had lots of friends who were neither from my own country nor Irish. I was a member of organisations/clubs which predominantly consist of Irish people. I was a member of organisations/clubs which predominantly consist of people neither from my own country nor Irish. |
| | <i>Resource and closeness</i> | I hung out with Irish friends (coffee, movie, drinks) at least once per month. I preferred to seek help from my Irish friends. I used to visit Irish friends' house, or they visited my house. I hung out with international friends (coffee, movie, drinks) at least once per month. I preferred to seek help from my international friends. I used to visit international friends' house, or they visited my house. |

Source: Authors' analysis.

Note: Range: 1 (disagree) – 5 (agree). Cronbach alpha for bonding social capital with co-nationals is 0.96, for bridging social capital with Irish is 0.89, for bridging social capital with other internationals is 0.94.

Table 5: Logistic Regression Predicting the Likelihood of Staying or Returning Bonding vs Bridging

| | <i>Model 1</i> <i>Odds ratio (S.E.)</i> | <i>Model 2</i> <i>Odds ratio (S.E.)</i> |
|---|--|--|
| <i>Bonding social capital</i> | 0.90 (0.04) | – |
| Bonding social capital (numbers of ties) | – | 0.84 (0.16) |
| Bonding social capital (resources and closeness) | – | 0.94 (0.11) |
| <i>Bridging social capital</i> | 1.22*** (0.05) | – |
| Bridging social capital (numbers of ties) | – | 1.13 (0.14) |
| Bridging social capital (resources and closeness) | – | 1.27** (0.11) |
| <i>Family social capital from home country</i> | 1.28 (0.45) | 1.24 (0.44) |
| <i>Degree</i> | | |
| Bachelor | Ref. | Ref. |
| Master's | 0.30 (0.20) | 0.29 (0.20) |
| PhD | 0.87 (0.77) | 0.86 (0.77) |
| <i>Field of study (STEM)</i> | 3.70* (2.01) | 3.65* (2.00) |
| <i>University (Dublin-based)</i> | 1.99 (1.05) | 1.91 (1.03) |
| <i>English ability</i> | 1.20* (0.09) | 1.20* (0.09) |
| <i>Work experience</i> | 0.99 (0.33) | 0.99 (0.13) |
| <i>Internship experience</i> | 0.61 (0.19) | 0.62 (0.20) |
| <i>Gender (Male)</i> | 0.69 (0.28) | 0.73 (0.31) |
| <i>Age</i> | 0.97 (0.10) | 0.97 (0.10) |
| <i>Original plan of not going back</i> | 4.37** (1.95) | 4.38** (1.96) |
| <i>Parents' highest education (Tertiary or above)</i> | 1.04 (0.45) | 1.07 (0.47) |

Table 5: Logistic Regression Predicting the Likelihood of Staying or Returning (Contd.) Bonding vs Bridging

| | <i>Model 1</i> <i>Odds ratio (S.E.)</i> | <i>Model 2</i> <i>Odds ratio (S.E.)</i> |
|----------------------------|--|--|
| <i>Years in Ireland</i> | 0.76 (0.13) | 0.76 (0.14) |
| <i>Origin</i> | | |
| Chinese | Ref | Ref |
| Other Asian expect Chinese | 0.73 (0.43) | 0.71 (0.42) |
| Latin American | 1.81 (2.62) | 2.29 (3.55) |
| African | 0.05** (0.05) | 0.05** (0.05) |
| Others | — | — |
| Constant | 0.01 | 0.01 |
| Log-likelihood | −94.90 | −94.69 |
| Observation | 270 | 270 |
| Pseudo R ² | 0.49 | 0.49 |

Source: Authors’ analysis.

Note: *p<0.05, **<0.01, ***<0.001. Odds ratios and standard errors are reported.

In Model 1, bridging social capital shows a significant positive effect on the likelihood of staying abroad. For each unit increase in bridging social capital, the odds of staying abroad increase by a factor of 1.2, holding all other variables constant. On the other hand, bonding social capital, although the coefficient has the sign expected from the theory, lost its significance. For human capital variables, similar to the results in Table 3, STEM disciplines and English language ability had positive and significant effects on the odds of remaining abroad. As for the controls, African students and those whose original plan was to return home were again found to be more likely to return to their home country upon graduation. In Model 2 where each type of social capital is disaggregated into quantitative and qualitative components, the latter, resources, and closeness of bridging social capital show a significant positive effect on the likelihood to stay: the more resources embedded in bridging ties and the closer a graduate is with non-co-national friends, the more likely he or she is to stay abroad. Thus, we can conclude that compared with how many non-co-national friends one has, it is how resourceful they are and how close one is to them that really matters. This finding provides important insight into the social capital literature by emphasising not the size but the availability of resources embedded in networks that matters for global migrants. As for bonding, neither dimension of social capital revealed any significant effects. Family social capital from home also remained not significant.

5.3 Robustness Check

A valid concern may arise that our results generated using the sample data are either overly dependent on the way we constructed social capital or prone to suffer from self-section bias due to the use of a voluntary survey platform and snowball sampling. To address these concerns, we conducted two robustness checks. First, we performed principle component analysis (PCA) of the five items included in each social capital variable (bonding with co-nationals, bridging with Irish and bridging with other internationals) and retained the first components from each PCA. The first components explain 87 per cent, 69 per cent and 70 per cent of the variations in each five-item social capital variables, respectively. The correlation between the bonding component and the summed bonding used in the analysis is 1, between bridging with Irish and the summed bridging with Irish is 0.99, and 0.94 for with bridging with other internationals, which all indicate very high correlation. We then substituted the summed social capital variables with the components from PCA in the regression models and no significant differences were detected between these two approaches. Second, we tried dropping the snowball sample and re-ran our regression models only on the probability sample. No significant differences were detected on the results between the whole sample and the probability sample. We also tried dropping the small number of observations which moved to other European countries and non-home countries (that is, the last two columns in Table 1) and re-ran our model. No significant differences were detected as well. Thus, we are assured that our results are, to a large extent, robust.

VI CONCLUSION AND IMPLICATION

This study focusses on the effects of social and human capital on the likelihood of staying abroad or returning home upon graduation for international students studying in Irish universities. Social capital is measured in terms of friends and family networks. A key emphasis is placed on the distinction between bonding and bridging forms of social capital and we investigate whether these two forms of social capital have different impacts on international students' migration decisions. An online survey was carried out among non-EU alumni who graduated from Irish universities during 2014 to 2016.

The findings indicated that for international graduates of Irish universities, qualifications in STEM disciplines, better language skills, and possession of greater amounts of bridging social capital all increase their likelihood of staying and working in the West upon graduation. This supports the theoretical expectation that, unlike bonding social capital, bridging social capital provides immigrants with new and non-repetitive information that is useful in settling down or finding a job in a new environment (Putnam, 1995). The results were also found to be in line with neoclassical theories of migration that regard human capital as a crucial factor

determining people's migration destination choices (Schultz, 1961). Moreover, drawing on Bourdieu's theorisation (1986) which distinguishes between the size of the network and the volume of social capital possessed by networked individuals, we decomposed bonding and bridging social capital into two components: numbers of ties (quantitative) versus resources and closeness (qualitative). Our findings support the idea that rather than the *number* of bridging ties one has, it is how resourceful those ties are, and how close students are to their network associates, that can be really important in helping graduates to find jobs and settle in the West.

This study contributes to the literature in three ways. First, while most studies acknowledge the positive role social capital plays in international student migration, this study is the first of its kind to examine how different forms of social capital can have different, or even opposite, impacts on students' migration behaviour upon graduation. Strong evidence was found to support our hypothesis that they do have different impacts on international students' destination choices after graduation. Secondly, while most quantitative studies in this field rely upon migration intentions, asking students where they plan or wish to be upon graduation, this study uses observational data collected among alumni, asking where they were upon graduation. Thirdly, this study provides the first study of migration decisions of international students in the Irish context.

The findings of this study have to be seen in the light of some limitations. The first is the quality of the dataset used. Due to the lack of appropriate secondary data sources, we collected first-hand data on international graduates' social capital, post-graduation destination and other important socio-demographic information. Notwithstanding our efforts in the data collection, the final usable sample size of 325 is still relatively small. Moreover, in order to increase the sample size, we had to use snowball sampling method, which encourages survey participants to forward the survey to their previous classmates. The downside of snowball sampling is it may introduce non-randomness and self-selection bias into the sample. However, we established the robustness of our findings by dropping the snowball sample and replicating the pattern of results. Thirdly, more advanced techniques to measure social capital, such as the position generator (Lin, 2001) or name generator (Burt, 1997), could be used in future research. These methods, though more costly and time-consuming, may capture the complex information in interpersonal network ties better than the traditional Likert scale method used in this study.

The findings of this study have important implications at both individual and national level. For individual students, this study points to a clear set of factors that can influence their destination upon graduation. International students who wish to stay and work in their host country upon graduation could increase their likelihood of staying and working in the West by improving their English language ability, studying STEM subjects and investing time in building bridging networks. From a macro perspective, this study provides policymakers an empirically informed understanding of international students' study-to-work transition in the Irish context.

Of course, the findings of this study would also be of interest to student-sending countries, which enable and fund their young talented citizens to travel overseas to study but face the risk of eventually losing them. Policymakers from student-sending countries might need to consider policies to enhance ties with their emigrant students and develop incentives to attract them back to their countries of origin.

REFERENCES

- Alberts, H.C. and H.D. Hazen, 2013. *International Students and Scholars in the United States: Coming from abroad*. Springer.
- Baruch, Y., P.S. Budhwar and N. Khatri, 2007. "Brain Drain: Inclination To Stay Abroad After Studies", *Journal of world business*, 42(1), 99-112.
- Bauder, H., 2003. "'Brain Abuse', or the Devaluation of Immigrant Labour in Canada", *Antipode*, 35(4), 699-717.
- Becker, G.S., 1964. "Human Capital Theory", *Columbia, New York, 1964*.
- Beech, S.E., 2014. "Why Place Matters: Imaginative Geography and International Student Mobility", *Area*, 46(2), 170-177.
- Beech, S.E., 2015. "International Student Mobility: The Role of Social Networks", *Social & Cultural Geography*, 16(3), 332-350.
- Beine, M., S. Bertoli and J. Fernández-Huertas Moraga, 2016. "A Practitioners' Guide to Gravity Models of International Migration", *The World Economy*, 39(4), 496-512.
- Belfield, C., and Z. Morris, 1999. "Regional Migration To and From Higher Education Institutions: Scale, Determinants and Outcomes", *Higher Education Quarterly*, 53(3), 240-263.
- Bian, Y., 1997. "Bringing Strong Ties Back in: Indirect Ties, Network Bridges and Job Searches in China", *American Sociological Review*, 366-385.
- Bourdieu, P., 1986. "The Forms of Capital", *Cultural Theory: An Anthology*, 1, 81-93.
- Boyd, M., 1989. "Family and Personal Networks in International Migration: Recent Developments and New Agendas", *International migration review*, 23(3), 638-670.
- Brooks, R., and J. Waters, 2009. "International Higher Education and the Mobility of UK Students", *Journal of Research in International Education*, 8(2), 191-209.
- Brooks, R. and J. Waters, 2010. "Social Networks and Educational Mobility: The Experiences of UK Students", *Globalisation, Societies and Education*, 8(1), 143-157.
- Brooks, R. and J. Waters, 2011. *Student Mobilities, Migration and the Internationalization of Higher Education*. Springer.
- Burt, R.S., 1984. "Network Items and the General Social Survey", *Social Networks*, 6(4), 293-339.
- Burt, R. S., 1997. "A Note on Social Capital and Network Content", *Social Networks*, 19(4), 355-373.
- Coll, R.K. and K.E. Zegwaard, 2006. "Perceptions of Desirable Graduate Competencies for Science and Technology New Graduates", *Research in Science & Technological Education*, 24(1), pp. 29-58.
- Collins, F. L., 2008. "Bridges to Learning: International Student Mobilities, Education Agencies and Inter-personal Networks", *Global Networks*, 8(4), 398-417.
- Collins, F.L., K.C. Ho, M. Ishikawa and A.H.S. Ma, 2017. "International Student Mobility and after-study Lives: The Portability and Prospects of Overseas Education in Asia", *Population, Space and Place*, 23(4), e2029.
- Coleman, J.S., 1988. "Social Capital in the Creation of Human Capital", *American Journal of Sociology*, 94, S95-S120.

- Constant, A.F. and E. D'Agosto, 2010. "Where Do the Brainy Italians Go?", in *The Labour Market Impact of the EU Enlargement* (pp. 247-271). Physica-Verlag HD.
- Courtois, A., 2018. *The Significance of International Student Mobility in Students' Strategies at Third Level in Ireland*.
- De Grip, A., D. Fouarge and J. Sauer Mann, 2010. "What Affects International Migration of European Science and Engineering Graduates?", *Economics of Innovation and New Technology*, 19(5), 407-421.
- Doerschler, P., 2006. "Push-pull Factors and Immigrant Political Integration in Germany", *Social Science Quarterly*, 87(5), pp.1100-1116.
- Dustmann, C. and F. Fabbri, 2003. "Language Proficiency and Labour Market Performance of Immigrants in the UK", *The Economic Journal*, 113(489), 695-717.
- Findlay, A.M., 2011. "An Assessment of Supply and Demand-Side Theorizations of International Student Mobility", *International Migration*, 49(2), 162-190.
- Findlay, A.M., R. King, F.M. Smith, A. Geddes and R. Skeldon, 2012. "World Class? An Investigation of Globalisation, Difference and International Student Mobility", *Transactions of the Institute of British Geographers*, 37(1), 118-131.
- Findlay, A., L. Prazeres, D. McCollum and H. Packwood, 2017. "'It Was Always The Plan': International Study as 'Learning To Migrate'", *Area*, 49(2), 192-199.
- Flap, H. and B. Völker, 2004. "Creation and Returns of Social Capital", in *Creation and Returns of Social Capital* (pp. 20-35). Routledge.
- Gérard, M., and S. Übelmesser, 2014. *The Mobility of Students and the Highly Skilled, Implications for Education Financing and Economic Policy*.
- Gérard, M. and S. Übelmesser, 2015. *The Mobility of Students and the Highly Skilled: Implications for Education Financing and Economic Policy*.
- Gilmartin, M., P.R. Coppari and D. Phelan, 2016. "International Student Migration to Ireland". NIRSA Working Paper No. 80. Maynooth University.
- Gingras, Y. and R. Roy, 2000. "Is There a Skill Gap in Canada?", *Canadian Public Policy/Analyse de politiques*, S159-S174.
- Ginwright, S.A., 2007. "Black Youth Activism and the Role of Critical Social Capital in Black Community Organizations", *American Behavioral Scientist*, 51(3), pp. 403-418.
- González, C.R., R.B. Mesanza and P. Mariel, 2011. "The Determinants of International Student Mobility Flows: An Empirical Study on the Erasmus Programme", *Higher Education*, 62(4), 413-430.
- Granovetter, M.S., 1973. "The Strength of Weak Ties", *American Journal of Sociology*, 78(6), 1360-1380.
- Granovetter, M., 1985. "Economic Action and Social Structure: The Problem of Embeddedness", *American Journal of Sociology*, 91(3), 481-510.
- Granovetter, M.S., 2018. *Getting a Job: A Study of Contacts and Careers*. University of Chicago Press.
- Guruz, K., 2011. *Higher Education and International Student Mobility in the Global Knowledge Economy: Revised and Updated Second Edition*. SUNY Press.
- Guth, J. and B. Gill, 2008. "Motivations in East–West Doctoral Mobility: Revisiting the Question of Brain Drain", *Journal of Ethnic and Migration Studies*, 34(5), 825-841.
- Haug, S., 2008. "Migration Networks and Migration Decision-making", *Journal of Ethnic and Migration Studies*, 34(4), 585-605.
- Han, X., G. Stocking, M.A. Gebbie and R.P. Appelbaum, 2015. *Will They Stay or Will They Go? International Graduate Students and Their Decisions to Stay or Leave the US Upon Graduation*. PloS one, 10(3).
- Hazelkorn, E. 2014. "Rebooting Irish Higher Education: Policy Challenges for Challenging Times", *Studies in Higher Education*, 39(8), pp.1343-1354.

- Hazen, H. D. and H.C. Alberts, 2006. "Visitors or Immigrants? International Students in the United States", *Population, Space and Place*, 12(3), 201-216.
- Heath, A. and S. Yu, 2005. "Explaining Ethnic Minority Disadvantage", *Understanding Social Change*, 187-224.
- Higher Education Authority, 2016. "Higher Education Fact Sheet: Internationalization". Retrieved January 11, 2019, from: <http://hea.ie/assets/uploads/2017/12/INT-Factsheet-Final-PDF-version.pdf>.
- Higher Education Authority, 2018. "Statistic Archive". Retrieved June 11, 2018, from: <http://hea.ie/statistics-archive/>.
- Hugo, G., 1981. *Village-community Ties, Village Norms and Ethnic Networks: A Review of Evidence From the Third World. Migration Decision Making: Multidisciplinary Approaches to Microlevel Studies in Developed and Developing Countries*. 186-224. Pergamon Press.
- Jallade, J. and J. Gordon, 1997. "Student Mobility Within the European Union: A Statistical Analysis", Report for DGXXII of the European Commission.
- Kanas, A., B.R. Chiswick, T. Van Der Lippe and F. Van Tubergen, 2012. "Social Contacts and the Economic Performance of Immigrants: A Panel Study of Immigrants in Germany", *International Migration Review*, 46(3), pp.680-709.
- Kapur, D. and J. McHale, 2005. *Give Us Your Best and Brightest: The Global Hunt for Talent and Its Impact on the Developing World*. Washington, DC: Center for Global Development.
- Kauppinen, I., 2015. "Towards a Theory of Transnational Academic Capitalism", *British Journal Of Sociology of Education*, 36(2), 336-353.
- Kawachi, I., B.P. Kennedy and R. Glass, 1999. "Social Capital and Self-Rated Health: A Contextual Analysis", *American Journal of Public Health*, 89(8), 1187-1193.
- Kawachi, I. and L. Berkman, 2000. "Social Cohesion, Social Capital, and Health", *Social Epidemiology*, 174, 190.
- King, R. and I. Shuttleworth, 1995. "The Emigration and Employment of Irish Graduates: The Export of High-Quality Labour From the Periphery of Europe", *European Urban and Regional Studies*, 2, 21-40.
- King, R. and E. Ruiz-Gelices, 2003. "International Student Migration and the European 'Year Abroad': Effects on European Identity and Subsequent Migration Behaviour", *International Journal of Population Geography*, 9(3), 229-252.
- King, R. and P. Raghuram, 2013. "International Student Migration: Mapping the Field and New Research Agendas", *Population, Space and Place*, 19(2), 127-137.
- King, R., and G. Sondhi, 2018. "International Student Migration: A Comparison of UK and Indian Students' Motivations for Studying Abroad", *Globalisation, Societies and Education*, 16(2), 176-191.
- Kofman, E. and P. Raghuram, 2006. "Gender and Global Labour Migrations: Incorporating Skilled Workers", *Antipode*, 38(2), 282-303.
- Lancee, B., 2010. "The Economic Returns of Immigrants' Bonding and Bridging Social Capital: The Case of the Netherlands 1", *International Migration Review*, 44(1), 202-226.
- Lin, N., 1999a. "Social Networks and Status Attainment", *Annual review of sociology*, 25(1), 467-487.
- Lin, N., 1999b. "Building a Network Theory of Social Capital", *Connections* 22(1): 28-51, INSNA.
- Lin, N., 2001. "The Position Generator: Measurement Techniques for Investigations of Social Capital", *Social Capital: Theory and Research*.
- Lin, N. and B. H. Erickson, (eds.), 2010. *Social Capital: An International Research Program*. Oxford University Press.
- Massey, D.S., J. Arango, G. Hugo, A. Kouaouci and A. Pellegrino, 1999. *Worlds in Motion: Understanding International Migration at the End of the Millennium: Understanding International Migration at the End of the Millennium*. Clarendon Press.

- Mincer, J., 1958. "Investment in Human Capital and Personal Income Distribution", *Journal of Political Economy*, 66(4), pp.281-302.
- Mazzarol, T., and G. Soutar, 2002. "Push-Pull Factors Influencing International Student Destination Choice", *International Journal of Educational Management*, 16, 82-90.
- Murphy-Lejeune, E., 2002. *Student Mobility and Narrative in Europe: The New Strangers* (Vol. 1). Psychology Press.
- Naidoo, V., 2007. "Research on the Flow of International Students to UK universities: Determinants and Implications", *Journal of Research in International Education*, 6(3), 287-307.
- Nannestad, P., G. Lind Haase Svendsen and G. Tinggaard Svendsen, 2008. "Bridge Over Troubled Water? Migration and Social Capital", *Journal of Ethnic and Migration Studies*, 34(4), 607-631.
- O'Leary, S., 2013. "Collaborations in Higher Education With Employers and Their Influence on Graduate Employability: An Institutional Project", *Enhancing Learning in the Social Sciences*, 5(1), pp.37-50.
- Oosterbeek, H. and D. Webbink, 2011. "Does studying Abroad Induce a Brain Drain?", *Economica*, 78(310), 347-366.
- Organisation for Economic Co-operation and Development, 2013. *How is International Student Mobility Shaping Up?*. OECD Publishing.
- Parey, M. and F. Waldinger, 2010. "Studying Abroad and the Effect on International Labour Market Mobility: Evidence from the Introduction of ERASMUS", *The Economic Journal*, 121(551), 194-222.
- Portes, A., 1998. "Social Capital: Its Origins and Applications in Modern Sociology", *Annual Review of Sociology*, 24(1), 1-24.
- Putnam, R.D., 1995. "Bowling Alone: America's Declining Social Capital", *Journal of Democracy*, 6, 65-78.
- Reitz, J.G., 2001. "Immigrant skill Utilization in the Canadian Labour Market: Implications of Human Capital Research", *Journal of International Migration and Integration/Revue de l'integration et de la migration internationale*, 2(3), 347-378.
- Sjaastad, L.A., 1962. "The Costs and Returns of Human Migration", *Journal of Political Economy*, 70(5, Part 2), 80-93.
- Soon, J.J., 2012. "Home Is Where The Heart Is? Factors Determining International Students' Destination Country Upon Completion of Studies Abroad", *Journal of Ethnic and Migration Studies*, 38(1), 147-162.
- Schultz, T.W., 1961. "Investment in Human Capital", *The American Economic Review*, 51(1), 1-17.
- Sondhi, G. and R. King, 2017. "Gendering International Student Migration: An Indian Case-study", *Journal of Ethnic and Migration Studies*, 43(8), 1308-1324.
- The Irish Times*, 2017. "Brexit Sparks Surge in Foreign Applicants for Irish Universities". [online] Retrieved October 8, 2018, from: <https://www.irishtimes.com/news/education/brexit-sparks-surge-in-foreign-applicants-for-irish-universities-1.3173982>.
- Todaro, M.P., 1969. "A Model of Labor Migration and Urban Unemployment in Less Developed Countries", *The American Economic Review*, 59(1), 138-148.
- Todaro, M.P., 1976. *Migration and Economic Development: A Review of Theory, Evidence, Methodology and Research Priorities*.
- Todaro, M.P. and L. Maruszko, 1987. "Illegal Migration and US Immigration Reform: A Conceptual Framework", *Population and Development Review*, 101-114.
- Tuckman, H.P., 1970. "Determinants of College Student Migration", *The Southern Economic Journal*, October, 184-189.
- UNESCO, 2018. "Global Flow of Tertiary-Level Students". Retrieved January 11, 2019, from: <http://uis.unesco.org/en/uis-student-flow>.
- Waters, J. and R. Brooks, 2011. "'Vive la Différence?': The 'International' Experiences of UK Students Overseas", *Population, Space and Place*, 17(5), 567-578.

- Wilson, J. and M. Musick, 1997. "Who Cares? Toward an Integrated Theory of Volunteer Work", *American Sociological Review*, pp. 694-713.
- Wong, B.P., 2006. *The Chinese in Silicon Valley: Globalization, Social Networks and Ethnic Identity*. Rowman & Littlefield.