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Béatrice Knerr (Ed.)

Asian students in Germany

Contexts of their Studies, Living Conditions and Future Plans

kassel university press

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Introduction

Over many decades, Germany has been one of the major host countries of international students. At the wake of the 21st century, the vast majority of them are coming from Asian countries. Under the conditions of increasing globalization and international competition which affects all spheres of international, national, local and individual economic development, the students, their countries of origin as well as Germany as the host country are confronted with specific challenges which are associated with sometimes conflicting plans, hopes, and worries, framed by different degrees of uncertainty. Major questions in this context from the side of the students are: How can I adapt to the study and social conditions in Germany to make the best of my stay in terms of quality of life and study success? Being part of the "global race for talents", the Germany's openly asks the question, how Asian students could be retained in the country after graduation, focusing primarily on those with qualifications, i.e. mathematics, information technology, natural sciences and technology / engineering, as well as medicine. Finally, for the students' countries of origin, the questions arise, if the human and financial resources spent on the studies abroad of their nationals (from private or public sources) are well invested, and to which extent the graduates will return to work for the benefit of their nation. This volume intends to contribution to answering these questions, and in this sense the studies assembled in it are relevant for all of these actors.

Although some general characteristics of Asian students in Germany might emerge from a highly aggregated point of view (see Chapter 1 of the volume), a closer look reveals significant country wise differences and, broken further down, differences according to gender, cohort and student's fields of studies. For elaborating them we present a series of essentially survey-case studies

about the situation of Asian students in Germany focusing on PR China, Iran, India, Indonesia, Nepal, and Pakistan as major countries of origin.

To highlight the different socio-economic contexts of the countries from where the students come, Table 1 presents some key indicators.

Table 1: Key indicators of Asian students' countries of origin

	India	China	Nepal	Indonesia	Iran	Pakistan
GNI per capita, curr. US$, 2013	1,570	6,560	730	3,580	5,780	1,360
GNI per capita, in purchasing power parity, curr. intern. $, 2013	5,350	11,850	2,260	9,270	15,610	4,840
Expenditures per student, % of GDP per capita, 2011-12	7,1	-	-	11,9	12,0	-
Literacy rate, adult (%), 2010-12	-	95	57	93	84	55
Progress to secondary school, male (%), 2010-12	88	-	81	97	96	72
Progress to secondary school, female (%), 2010-12	89	-	82	96	96	78
Labour force participation male (%), 2012	81	78	87	84	73	83
Labour force participation female (%), 2012	29	64	80	51	16	24

Source: World Bank 2014

Acknowledgments

This book is the outcome of an idea born in 2010 by the team of young international researchers from different Asian countries at the Department of Development Economics, Migration and Agricultural Policy (DEMAP) at the University of Kassel. Considering the challenges, chances, hopes, and also disappoints experienced by them since their arrival in Germany, on the academic as well as on the private level, we entered into a discussion if the problems faced and the priorities set are similar; how far they are interested in staying in Germany, returning home, or move on to third countries. Eventually two essential questions arose a) how far are the individual experiences typical for fellow countrymen/women?; and b) are there typical differences between nationalities? We realized that the answers to these questions are highly relevant at the policy level of the students' home countries as well as at Germany's policy level where in a situation of perceived increasing shortages of highly-qualified labour force the issue of retaining international students after their graduation and integrating them into the German labour market is high on the governments' economic agenda.

On the basis of vivid debates we finally decided to set up a small joint research project, working first on basic issues, and then using our networks to implement surveys among students. Later on the core team was complemented by new DEMAP students who were eager to contribute so that the last survey was completed in 2014. These surveys are comprehensive, although not representative.

Overall, in addition to coordinating the project, I took over the tasks of writing the introduction into the topic and co-authoring the chapters.

Our team was supported by other DEMAP members. Here, I am first of all thankful to our secretary Angela Döring, who intensively worked on text revisions and based on her editing experiences formatted the text, graphs and

tables in a professional way; as usual she was quite patient in working on an almost endless number of “final versions”, and keeping the overview of the book even after longer project slacks. I also want to thank our student assistant James Ellison for polishing the language which was a most valuable input as we are all not native English speakers and in spite of having strong competences had to realize that exactly hitting the point is often not so easy.

I would also like to take this opportunity for thanking, in the name of the whole research team, the different organizations which were funding our young researchers’ studies in Germany, and their field work in various parts of the world, namely the German Academic Exchange Service (Deutscher Akdamemischer Austauschdienst – DAAD); the International Center for Development and Decent Work (ICDD, a Center of Excellence for Exchange and Development funded by the German Federal Ministry for Economic Cooperation and Development (BMZ)); Heinrich-Böll Foundation (HBS); Faculty of Economics, Brawijaya University; Ministry of Education, Republic Indonesia; Government College University, Faisalabad (GCUF); Higher Education Commission, Pakistan. (HEC); and The Government of Punjab, Pakistan (GOP).

Last not least, I would like to express my gratitude to the large number of unnamed students who were prepared to support our project by devoting their time to answering our questions and filling the questionnaires. Without their support, this project would not have been thinkable.

Beatrice Knerr

Chapter 1: Introduction to the topic

Foreign students in Germany in the context of the internationalization of Higher Education

Beatrice Knerr[1]

1. Introduction

At the wake of the 21st century, Germany is challenged by a declining and ageing labour force, and increasing shortages of different kinds of highly-skilled experts. Therefore, the country's policy makers since the late 1990s follow an explicit strategy of attracting high-potentials from abroad, with a priority on so-called "MINT" qualifications, i.e. mathematics, information technology, natural sciences and technology/engineering, as well as medicine. In this area Germany is, however, meeting with stiff competition by other industrialized countries in the global race for talents, as more and more OECD states in demographic transition are similarly confronted with widening gaps between domestic supply and demand for such labour force. In this situation, international students have been discovered as a potential target group to increase the country's human capital stock.

However, what is Germany's position in the expanding global market of higher education? From where do the international students come, what are their qualifications and preferences, and how do they assess Germany as a present and future host country? These are the questions, which this article will approach by exploration of secondary data and a literature review.

The study focuses on international students at tertiary education level. In line with the standard OECD definition, the term "international students" in this context refers to those who have left their country of origin with the intention of studying abroad while the term "foreign students" also includes those who

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made their final secondary school examination in the country in which they are enrolled although they are not nationals of that country (still they might be residents or even been born there) (OECD 2013: 305).

The analysis essentially works with official data provided by national and international institutions, in particular from 1) the internet data base of the United Nations Educational, Scientific and Cultural Organization (UNESCO); 2) the Organization for Economic Co-operation and Development's (OECD), in particular different volumes of "Education at a Glance" (OECD 2013); 3) the data about foreign students in Germany collected annually through a survey by the Academic Information System (Hochschulinformationssystem - HIS) and published by the German Academic Exchange Service (DAAD); 4) the German Government's annual Migration Reports; and 5) the results of the Social Survey among Foreign Students conducted each year since 1997 by the German Centre for University and Science Research (Deutsches Zentrum für Hochschul- und Wissenschaftsforschung - DZHW) on behalf of the German Students Association (Studentenwerk) (Apolinarski and Poskoswsky 2014).

The paper is organised as follows: after this introduction, section 2 shows global trends in the internationalization of higher education, including a retrospect and a review of determinants and characteristics of supply and demand. Section 3 presents the composition of international students in Germany, focusing on their nationalities and their fields of studies, as well as on the combination of both. In section 4, Germany's relevant immigration policies within the framework set by the European Union (EU) are explained, while section 5 provides insights into the socio-economic situation of international students in Germany. Section 6 concludes and develops perspectives and policy recommendations.

2. Trends in the internationalization of Higher Education

Over the early 21st century, the demand for higher education world-wide has proliferated. Between 2000 and 2011, the number of students enrolled in universities more than doubled, corresponding to an growth rate of almost 7% p.a. (OECD 2013). The same applied for international students, representing around 2% of all tertiary enrolments in the world. Between 1975 and 2011, their number increased from 0.8 million to 4.3 million, i.e. by more than fivefold (UNESCO 2014).

At the same time, significant international differences are observed, regarding both the demand for as well as the supply of higher education. Students show clear preferences for certain destinations being mainly attracted to OECD countries: in 2011, for example, the number of international students in tertiary education in OECD countries was three times higher than those moving into the opposite direction[2] (OECD 2013). The most popular host countries were the USA, United Kingdom, France, Australia and Germany (Table 1); all of them permanently have been among the top ten receiving countries since the early 1980s (Gürüz 2008). In 2012, 18% of all international students were in the USA, 11% the UK, 7% in France, 6% in Australia, and 5% in Germany (UNESCO 2014). The top four English-speaking countries (i.e. USA, UK, Australia and Canada) hosted more than half of the international students enrolled in all OECD countries. This proportion has considerably declined over the early 21st century yet; in had still been 1998, for example, it had been still 72% (OECD 2009). Some of the most important host countries have lost above average market shares over the early 2000s, in particular the USA whose part dropped from 26% in 2000 to 18% in 2012. Germany's share fell by about 3%-points and the UK's by 2 %-

[2] Constantly more than 80% of the international students were enrolled in G20 countries. The G20 countries are Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, United Kingdom, United States, European Union.

points. At the same time, new countries which had not been major hosts before appeared on the list of the top destinations.

Table 1: Top 10 destination countries of international students (2012)

Country	No in'000	Share (%)
United States	720	18
United Kingdom	440	11
France	280	7
Australia	240	6
Germany	200	5
Russian Federation	160	4
Japan	160	4
Canada	120	3
China	80	2
Italy	80	2

Source: UNESCO Institute of Statistics (2014)

The country with the highest share of foreign students among total tertiary enrolments is Australia with 20% in 2011, followed by UK with 17%, Switzerland (16%), New Zealand (16%) and Austria (15%). The OECD average is 7% (OECD 2013). Foreign students represent almost 8% of Germany's total student population; in the USA, only 3.4% of the students are foreigners (OECD 2013).

From the 1980s onwards, Asian countries, led by China and India, the world's most populous and economically up-rising countries, have emerged as major origins (Table 2). They are also expected to drive the expansion of students' mobility over the following decades (OECD 2013). In 2012, most of the international students came from China, in total almost 700,000 (Table 2); 25% of them were enrolled in the USA (UNESCO 2014).

A growing interest in study-abroad programs is also evident in the USA and Germany. The observed rise of Germany as a major country of origin is partly due to domestic admission restrictions for a number of study fields like medicine; the increased mobility support by EU programs; and a perceived

decline in the quality of education provided in home universities as compared to elite institutions abroad by part of the German students (Gürüz, 2008:170).

Table 2: Top 10 countries of origin of internationally mobile students (2012)

Country	Number	Share (%)
China	694,400	21.0
India	189,500	6.5
Republic of Korea	123,700	3.1
Germany	117,600	3.0
Saudi Arabia	62,500	1.6
France	62,400	1.6
United States	58,100	1.5
Malaysia	55,600	1.4
Viet Nam	53,800	1.4
Iran	51,600	0.8

Source: UNESCO Institute of Statistics (2014)

The new dynamic on the market for higher education is due to significantly changing conditions on the supply as well as on the demand side, although a number of stabilizing factors still persist.

3. Drivers of international student mobility

The major actors driving international student mobility on the supply side are the institutions of higher education and the governments in the (potential) host countries, and on the demand side the students, their families and the source countries' government policies.

3.1 Determinants at the demand side for higher education

Human capital is a major "raw material" for economic development in the knowledge economies of the 21st century. In fact, as emphasized by many researchers (see, e.g., Stark & Wang 2002), deficiencies of human capital are the major reason for low-income countries to remain poor. At the same time, higher education has become increasingly international since more and more

students wishing to better prepare themselves in a competitive globalized labour market and to expand their knowledge of other cultures and languages choose to study abroad.

According to the pioneering work of Becker (1993) and Schultz (1971) who laid the foundations of the human capital theory, establishing a relationship between investment in education and its returns, and Becker's (1993) time allocation theory, emphasizing that individuals seek to maximize their utility over their lifetime by investing (via education and training) in their human capital, higher education is considered as an individual investment, or a joint family investment. Key parameters are the expected income at different places, and the time preference expressed as the individual discount rates. Economic theory thus demonstrates that, under the aspect of private profitability, human capital investments should be made as early in life as possible (Becker 1993).

Becker (1981 and 1997) put the family as the central unit of production and consumption on the research agenda. Within that framework, consumers use to derive their utility not directly from the commodities that they purchase but from those they transform via a household production function into the goods they value. Within this model, the members are engaged in different activities, and each final good is produced and consumed within the household by combining time and purchased inputs. Hence, the full cost of a production activity includes both the opportunity costs of time and those of purchased inputs, whereby the household is subject to a time constraint, in which the available time is distributed between private activities and paid work, as well as to a goods constraint, in which the value of goods purchased on the market cannot exceed the amount of money earned outside the household. Hence, there is a trade-off between the time spent on paid work and the goods the household can produce by allocating time to home production. A basic

assumption is that the household's paid labour supply increases with the market wage rate which implies that less time is spent on household production. In addition, part of the resources is invested into family members' human capital. In the context of higher education this requires the student's time as well as purchased inputs, like tuition fees, books etc. to be funded by the family household, an investment, which later on might bring returns to the family. In general, families invest in their off-springs to give them a basis to earn a living. At the same time, the returns of higher education might accrue to the investing family members in form of social security, which the educated off-spring might provide in cases of emergency, in form of support in old age and other transfers, and also in terms of prestige. The difference between the wages rate for high-skilled labour on the one hand and for low-skilled on the other hand plays a decisive role for the extent of this investment: the larger it is, the more would be invested in human capital and vice versa. This also influences the probability of financing more expensive studies abroad. The decision process is also influenced by the fact that the productivity of time in the paid labour force varies over the lifecycle, and market wages obtained may do so accordingly.

This theoretical concept is to be extended by two dimensions when considering the overall motivations to undergo higher education: first, parts of the investments in education are motivated by altruism; second, there are also public returns to education, which usually do not enter the private decisions process, but are relevant for public investments in education.

The choice of a specific country for undergoing higher education abroad is determined usually by different parameters. A major selection criterion is the language. Countries where courses are offered in a widely spoken language have a global advantage against others. Across all OECD countries, in 2011 about one quarter of the international students came from a country with the

same national language as that of the country of destination (OECD 2013). Because English is the mother-tongue in several populous countries as well as the major international language of communication, many students already have learned it at school and at their home universities; hence, language hurdles are particularly low where English is the dominant language of instruction, contributing to the attractiveness of the English-speaking countries USA, Canada, Great Britain, Australia and New Zealand.

Not surprisingly, students chose their destination on the basis of the perceived quality of education offered there. Since the 1990s information in this regard is globally and widely available. As internet access has expanded tremendously more and more detailed websites of universities, as well as university rankings based on different criteria can easily be retrieved, and institutions can be contacted immediately for further questions.

Cost aspects are another essential choice parameter. Expenditures when studying abroad are composed of living costs and tuition fees. Most internationally top-ranked universities levy tuition fees, but there are considerable differences between and also within countries (see, e.g. AUCC 2014; Weingarten 2013). Moreover, they vary over time, and in many cases with regard to the students' country of origin.

In general, a preference to study in neighbouring countries is observed. In all OECD countries in 2011, on average 21% of the foreign students came from countries sharing a land or maritime border with the host country (OECD 2013).

Moreover, also the quality of place is an important criterion for young students when selecting their study location. This has been highlighted by Florida (2002) by theoretical and empirical considerations. Urban centres attract the so-called "creative class" to which international students as (future) highly qualified persons belong. They prefer cities and countries, which

provide a rich quality of place in terms of employment options, amenities, and diversity. This creates a circular causality of attraction, involving high-level education, interesting amenities, and employment opportunities for highly qualified, as under these conditions, firms and jobs are locating, relocating or being created where the talent is which in turn can more easily be found at already attractive locations.

Also, as in other forms of international migration, personal networks play their role in the selection of the host country: friends and relatives abroad provide information, they facilitate settling down and finding the way into the academic environment, hence helping to reduce transaction costs and risks (Dustman and Glitz, 2005; Castles and Miller 2009). This supports the clustering of students from certain source countries at certain universities.

Many international students are supported by their families for various reasons, ranging from pure altruism to the desire to receive support from well-settled off-springs later on as mentioned above. The perceived value and expected benefit of higher education acquired at prestigious universities abroad attracts them to invest in academic studies of their children in a foreign country.

All over the world governments are sponsoring the studies of their graduates at foreign universities, hoping that the higher-qualified would return with important skill and knowledge up-grading which they are expected to apply to the benefit of their home country. The background might be that the home country lacks human capital or looks for specific complementary skills. A country might also be too small or too resource poor to establish own effective faculties or programs. Especially technical, natural sciences and medicine faculties usually are subject to significant diseconomies of scale with declining numbers of students, in particular if they need expensive and up-to-date equipment (OECD 2013). In such cases, importing new knowledge

from outside embodied in students and graduates as resources to foster economic growth appears more profitable than establishing national facilities of higher education. In addition, nationals studying abroad can help to establish and maintain international relations.

Determinants at the supply side

More and more countries and universities are competing for the mobile students, and undertake strong marketing efforts for attracting them (see Davis and Mackintosh 2011). In this ambition governments are essentially motivated by the objectives to import human capital; to raise foreign exchange earnings; and to enhance international relations.

Many high-income countries and their institutions of higher education have realized that 'knowledge' is a globally highly valued asset and hence the services of academic resources and training systems can be exported (Iredale 2001). In the early 21st century, in particular for English-speaking countries, the export of academic services has become an important earner of foreign exchange. International students are perceived as an economic benefit for the host country, and the money they spent in form of study fees and daily life expenses including the associated multiplier effects, is frequently cited as a profitable impact of their presence (OECD 2004). In the USA, for example, they are among the major sources of service exports; in 2008, their tuition fees and living expenses contributed an estimated $17.8 billion to the US economy (US Dept. of Commerce, cit. from IIE 2009).

Hosting international students is also a way to import knowledge from abroad; this concerns first of all the attraction of international students into higher level programs, like PhD studies, where, in addition their own competence upgrading, they can also enrich research projects with their previously accumulated skills and qualifications.

International student mobility is more and more interlinked with international labour migration (Gürüz 2008). As mentioned above, international students have become an integral part of the global competition for highly qualified labour force. Hence, attracting students from other countries can be a strategy to expand the domestic pool of highly-skilled labour force, as part of them might decide to stay and work in the host country after their graduation. As such they are a valuable pre-socialized source of highly skilled immigrants. Under the given labour market conditions, the growing number of foreign students in OECD countries is also a response to signals promising possibilities for employment and residence in the host country after graduation (OECD 2008).

It can also be a useful strategy to offer higher education to international students who later on return to their country of origin; it is an important and widely used tool for supporting an international network, for political and/or economic reasons. This is particularly important for export-oriented nations like Germany. Moreover, international students supply diversity to domestic student populations; provide social and cultural knowledge; and can add prestige to their host's reputation.

In smaller countries, the presence of international students can also contribute to enhance the cost-effectiveness of the educational systems. By enrolling international students economies of scale can be achieved in faculties where the number of domestic students is comparatively small. So they may contribute to the viability of programs that otherwise would not attract a sufficient number of enrolments to justify their existence and in countries with lower public support for universities they might decisively broaden the tuition bases in the host institutions and thus even secure their survival.

Considering the advantages, in non-native English speaking countries, too, international master programs are increasingly offered in English.

Historical pathways and frame conditions evolved in the early 21st century

International student mobility in the early 21st century has also been promoted by independent global developments. The fact that over time transportation and communication have become cheaper and easier has fostered the expansion of international student exchange. In particular the expansion of the world-wide web has reduced transaction costs as it allows to access information rapidly e.g. via websites presenting study programs of foreign universities and others which are commenting them and to keep in touch with family members and friends at faraway places. Also, even with a smaller student budget it is possible to comfortably travel back and forth within short periods of time.

At the same time, the rise of broader middle classes in emerging economies like China and India is supposed to have a positive influence on the valuation of higher education, and studies abroad, as well as on private resources to be mobilized for that purpose.

In many regions, political considerations are in the background of reinforced international student exchange. Specific policies to foster the international movement of students between certain countries, resp. within a network of countries (such as the EU territory), are part of geostrategic considerations and have a leverage effect on student exchange.

Similarly, historical ties are an important determinant of the directions of international students' mobility. As demonstrated by Isserstedt and Schnitzer (2005), the mobility movement of students is related to bilateral relationships based on traditional and geopolitical connections. In this context, for example, historical ties are strengthening the movement of students from former colonies to former colonial powers, often supported by a common official language.

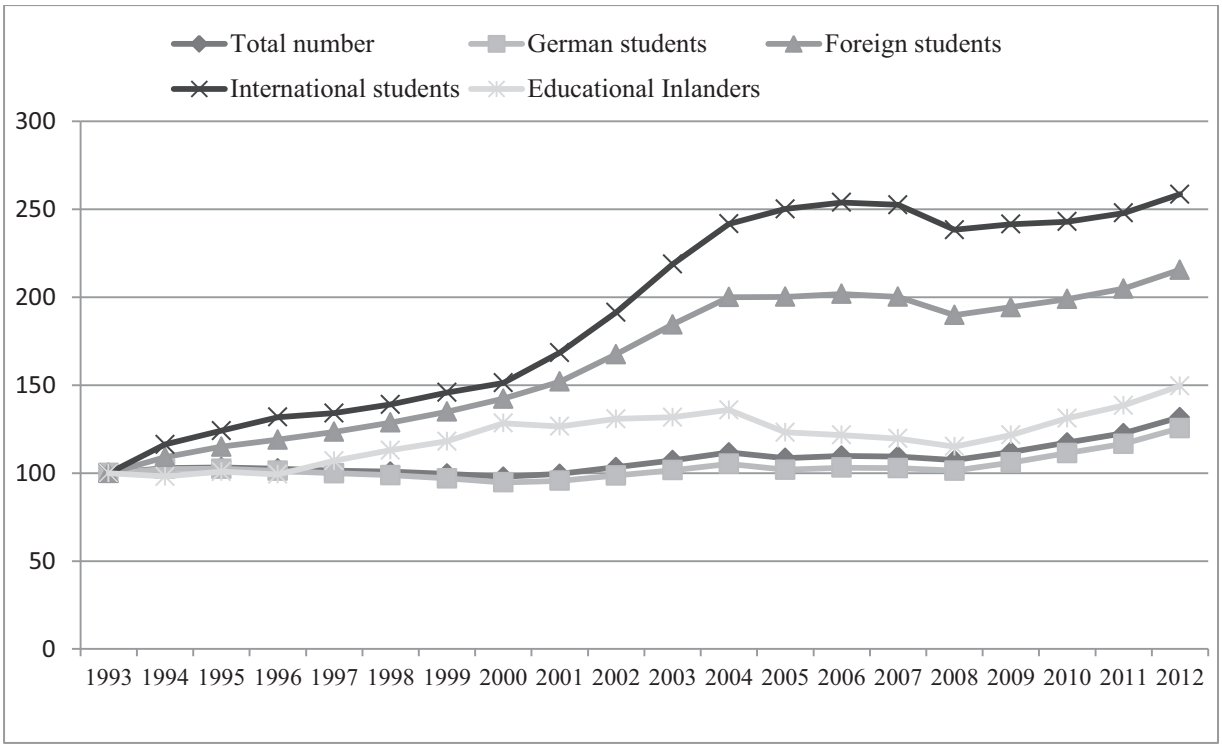
4. Nationalities and study areas: International students in Germany

Historical view

In 1860, 735 international students were placed at German institutions of tertiary level; before World War I, more than half of the world's internationally mobile students went to German universities, reflecting the high academic quality and reputation of these institutions, and their international scope and openness (Teichler 2007). Their number reached a peak of 7,088 by 1930/31, and afterwards sharply declined due to political turmoil and the Second World War (Gürüz 2008). Over the 1930s / early 1940s, as the Nazi regime broke international ties and also reduced the volume of higher education, Germany lost its global position (Teichler 2007). In 1939/40, the number of foreign students in Germany had dropped to less than 2,000, and it only recovered when Germany started to recuperate from the war (Gürüz 2008:132).

For decades, Germany has been reputed for its high-class university education especially in engineering natural sciences and medicine, equal treatment for domestic and international students, and identical tuition fees for all (Gürüz 2008). Since 1985 until 2005 it held a stable third position in the global ranking of host universities (Gürüz 2008), but afterwards it steadily fell behind, although the number of foreign students since the early 1990s has increased considerably more than that of Germans (see Fig, 1).

Fig. 1: Number of Students in Germany, 1993 to 2012 (indexed, 1993=100)



Source: Based on data from DAAD (2014)

Between 1993 and 2006, the share of foreign students in Germany's total student community increased from 6.8% to 12.5% and afterwards slowly declined to 11.1% in 2012, while that of international students increased from 4.1% to 9.8%, and then steadily dropped to 8.1% (DAAD and DZHW). Over the same period, the share of educational natives has permanently fluctuated around 3% of all students largely due to the presence of Turkish nationals who had visited school in Germany, and in most cases had also grown up in the country.

Nationalities, fields of study, and study level of international students

A larger share of the international students in Germany is enrolled at higher study levels than of the German students. In 2012, 25% of them were inscribed in Master programs and 13% as PhD students, as compared to only 13%, resp. 5% of the Germans. At the same time, 37% were studying in a

bachelor program which applied to 59% of the German students (Apolinarski and Poskoswsky 2014).

International students' most-chosen study areas in Germany are social sciences, business and law, and engineering.

Hence, they show a certain preference for fields of studies which are in high demand on the German labour market: 25% are enrolled in engineering, 19% in mathematics and natural sciences, and 6% in medicine (DAAD and DZHW 2013). The differences between nationalities regarding the fields and the levels of study are substantial yet. The share of those studying engineering is highest among students from low and lower middle income countries, with 29% and almost the same among those from middle-income countries, but just 17% among those from high-income countries. Engineering is particularly favoured by students from Asia: 40% of them have chosen subjects of this area (Apolinarski and Poskowsky 2014).

Preferences vary according to study level among the international PhD students, 39% are working in the area of mathematics and natural sciences, 18% in engineering, and 5% in medicine. At master level, 20% are in mathematics and 34% in engineering. There is also a pronounced gender difference with regard to the fields of study: while 37% of the male international students have chosen engineering and 23% mathematics and natural sciences, only 13% resp. 15% of the females did so. The gender distribution is more balanced in medicine with 5% of the males and 6% of the females (Apolinarski and Poskoswsky 2014).

Tables 3-5 show the 10 most frequently chosen study areas of international students, further broken down by the 10 most important nationalities of the students enrolled.

On first degree level, in the four major areas economics, mechanical and process engineering, IT and electro technology, Chinese constitute the largest

group; in engineering they reach a share of almost 36% (Table 3). Also in most of the other fields they occupy a high rank. The data show that also comparatively less populous countries, contribute substantial numbers of students with Cameroon being an outstanding example. In engineering and IT Cameroonians are at rank two, with 13.3%, resp. 21% of the students, and they are also significant in other areas, like economics, electro technology and human medicine. As Cameroon is one of the few former German colonies, this lends support to the theory that historical ties are a major determinant of host international students country choice. Overall, medicine shows an exceptional pattern: rank one, with almost 20% of the students, is occupied by Israel, a country which is not even ranked in the other fields of study; this applies also to the country on rank 3, Syria, with 13% of the medicine students.

The ranking is considerably different in the post-graduate studies (Table 4). Here, Chinese occupy the first place in all fields of studies, except for music and law (where they are on rank 2). In all the technical fields, India is found at the upper ranks, although its position is insignificant at the first degree level. Similar rank differences, although to a lesser extent, are observed among the Pakistanis, who are occupying places 3 to 5 in the technical fields.

Table 3: The 10 most frequently chosen study areas of international students of first degree courses[1)] according to students' nationalities (2012)

1. Economics			2. Mechanical Engineering, Process Engineering			3. Information Technology		
Origin	**Number**	**%**	**Origin**	**Number**	**%**	**Origin**	**Number**	**%**
China	1,733	18.3	China	2,070	35.8	China	685	16.3
Russian Federation	1,359	14.4	Cameroon	771	13.3	Cameroon	669	15.9
Bulgaria	1,260	13.3	Morocco	720	12.5	Morocco	516	12.3
Austria	1,109	11.7	Tunisia	494	8.5	Bulgaria	490	11.7
Ukraine	897	9.5	Turkey	435	7.5	Turkey	482	11.5
France	786	8.3	Malaysia	314	5.4	Russian Federation	359	8.5
Poland	626	6.6	France	275	4.8	Austria	319	7.6
Spain	585	6.2	Spain	246	4.3	Tunisia	256	6.1
Cameroon	565	6.0	Lebanon	239	4.1	Ukraine	213	5.1
Vietnam	531	5.6	Austria	219	3.8	Vietnam	212	5.0
Total of upper 10	9,451	100	Total of upper 10	5,783	100	Total of upper 10	4,201	100

4. Electro technology			5. Human Medicine			6. German Language and Literature		
Origin	**Number**	**%**	**Origin**	**Number**	**%**	**Origin**	**Number**	**%**
China	1,156	25.4	Israel	553	18.9	Poland	456	16.6
Morocco	961	21.1	Austria	407	13.9	Russian Federation	409	14.9
Cameroon	956	21.0	Syria	377	12.9	China	359	13.1
Tunisia	543	11.9	Bulgaria	352	12.0	United States	297	10.8
Turkey	282	6.3	Yemen	250	8.5	Georgia	259	9.5
Vietnam	178	3.9	Cameroon	221	7.6	Ukraine	250	9.1
Spain	144	3.2	Luxem-bourg	171	5.8	Italy	225	8.2
Lebanon	114	2.5	Italy	155	5.3	Luxem-bourg	167	6.2
Iran	113	2.5	Greece	149	5.1	France	159	5.8
Bulgaria	101	2.2	Russian Federation+ Indonesia	146 146	5.0 5.0	Bulgaria	158	5.8
Total of upper 10	4,548	100	Total of upper 10	2,927	100	Total of upper 10	2,739	100

Table 3, cont.

7. Law			8. Architecture, Interior Design			9. Music, Musicology		
Origin	**Number**	**%**	**Origin**	**Number**	**%**	**Origin**	**Number**	**%**
Poland	434	20.8	Bulgaria	270	19.7	Korea, Rep.	414	31.2
Bulgaria	334	16.0	China	266	19.4	China	211	15.9
France	319	15.3	Spain	163	11.9	France	135	10.2
Russian Federation	280	13.4	Luxem-bourg	117	8.5	Japan	104	7.8
Ukraine	166	8.1	Poland	113	8.2	Russian Federation	102	7.7
China	143	6.9	Italy	108	7.8	Taiwan	81	6.1
Greece	110	5.3	Turkey	101	7.4	Spain	76	5.7
Turkey	103	4.9	Korea, Rep.	89	6.5	Poland	73	5.5
Georgia	98	4.7	Greece	74	5.4	Ukraine	67	5.0
Spain	96	4.6	Russian Federation	72	5.2	Italy	65	4.9
Total of upper 10	2,083	100	Total of upper 11[2)]	1,373	100	Total of upper 10	1,328	100

10. Educational Science		
Origin	**Number**	**%**
Austria	244	20.3
Poland	195	16.2
Russian Federation	173	14.4
Ukraine	157	13.1
Luxembourg	108	9.0
Turkey	88	7.3
China	65	5.4
Georgia	60	5.0
Bulgaria	56	4.7
Morocco	55	4.6
Total of upper 10	1,201	100

1) According to the guidelines of the Federal Office Master degrees are assigned to post-graduate studies

2) As the Russian Federation and Indonesia have the same number of students enrolled (146) they are both listed (as 10a and 10b).

Source: Based on data from DAAD and DZHW (2013)

Table 5 shows that international PhD students are first of all attracted to natural sciences (biology, chemistry, and physics), followed by engineering and medicine. Chinese and Indians are occupying the first two ranks, in differing sequence. Together, they always make up more than 50% of all international PhD students, except in physics, incl. astronomy. These results demonstrate that international students in Germany tend to be primarily

enrolled in subjects which are in high demand on the German labour market; this applies primarily at post-graduate level.

Table 4: The 10 most frequently chosen study areas of international students in postgraduate studies[1)] according to students' nationalities (2012)

1. Economics			2. Electro Technology			3. Mechanical Engineering and Process Engineering		
Origin	**Number**	**%**	**Origin**	**Number**	**%**	**Origin**	**Number**	**%**
China	1,816	18.3	China	1,107	31.6	China	1,556	48.3
Russian Federation	982	14.4	India	944	27.0	India	562	17.4
Ukraine	571	13.3	Pakistan	419	12.0	Turkey	258	8.0
Austria	376	11.7	Iran	184	5.3	Iran	216	6.7
Bulgaria	355	9.5	Morocco	181	5.2	Pakistan	123	3.8
India	329	8.4	Turkey	169	4.8	Cameroon	108	3.4
Poland	267	6.6	Cameroon	140	4.0	Mexico	101	3.1
Turkey	253	6.2	Bangladesh	135	3.8	Morocco	100	3.1
France	250	6.0	Egypt	117	3.3	France	99	3.1
Iran	232	5.6	Austria	105	3.0	Austria	99	3.1
Total of upper 10	5,431	100	Total of upper 10	3,501	100	Total of upper 10	3,222	100

4. Information Technology			5. Music, Musicology			6. German Language and Literature		
Origin	**Number**	**%**	**Origin**	**Number**	**%**	**Origin**	**Number**	**%**
China	665	24.7	Korea, Rep.	876	41.4	China	472	35.9
India	596	22.2	Japan	324	15.3	Russian Federation	235	17.9
Russian Federation	256	9.5	China	247	11.7	Poland	155	11.8
Pakistan	209	7.8	Spain	122	5.8	Ukraine	135	10.3
Iran	206	7.7	Russian Federation	119	5.6	Georgia	87	6.7
Bulgaria	197	7.3	France	104	4.9	Italy	64	4.9
Turkey	173	6.4	Taiwan	99	4.7	Belarus	43	3.3
Ukraine	154	5.7	Italy	88	4.1	Turkey	42	3.2
Cameroon	121	4.5	Poland	74	3.5	Luxembourg	40	3.0
Morocco	113	4.2	United States	64	3.0	Egypt	40	3.0
Total of upper 10	2,690	100	Total of upper 10	2,117	100	Total of upper 10	1,313	100

Table 4, cont.

7. Law			8. Civil Engineering			9. Engineering in general		
Origin	**Number**	**%**	**Origin**	**Number**	**%**	**Origin**	**Number**	**%**
Poland	196	19.4	China	293	28.6	China	212	25.9
China	182	18.1	Austria	173	16.9	India	201	24.4
Russian Federation	147	14.7	India	145	14.2	Mexico	80	9.8
France	84	8.4	Iran	124	12.2	Pakistan	60	7.3
Ukraine	81	8.1	Turkey	81	7.9	Iran	58	7.1
Greece	69	6.9	Russian Federation	57	5.6	Vietnam	55	6.7
Georgia	63	6.3	Colombia	38	3.7	Turkey	45	5.5
Austria	58	5.8	Pakistan	38	3.7	Morocco	40	4.9
Turkey	53	5.3	Romania	37	3.6	Indonesia	36	4.4
Bulgaria + Colombia	35 35	3.5 3.5	Nepal	37	3.6	Colombia	33	4.0
Total of upper 11[2)]	1,003	100	Total of upper 10	1,023	100	Total of upper 10	820	100

10. Architecture, Interior Design		
Origin	**Number**	**%**
China	307	44.7
Korea, Rep.	63	9.1
Iran	56	8.2
Russian Federation	54	7.9
Bulgaria	48	7.0
Italy	36	5.2
Spain	35	5.1
Turkey	31	4.5
Ukraine	29	4.2
India	28	4.1
Total of upper 10	687	100

1) According to the guidelines of the Federal Statistical Office Master degrees are assigned to post-graduate studies

2) As Bulgaria and Colombia have the same number of students enrolled (35), they are both listed (as 10a and 10 b).

Source: Based on data from DAAD and DZHW (2013)

Table 5: The five most frequently chosen study areas of international PhD students according to students' nationality (2012)

1. Biology			2. Chemistry			3. Physics, Astronomy		
Origin	**Number**	**%**	**Origin**	**Number**	**%**	**Origin**	**Number**	**%**
India	421	31.4	China	340	32.6	China	160	19.0
China	362	27.0	India	256	24.4	India	141	16.7
Iran	111	8.3	Russian Federation	68	6.5	Italy	123	14.6
Italy	91	6.8	Turkey	64	6.1	Iran	101	12.0
Poland	73	5.5	Iran	57	5.5	Russian Federation	99	11.7
Pakistan	63	4.7	Italy	54	5.2	Ukraine	56	6.6
Turkey	58	4.3	Poland	54	5.2	France	37	4.4
Russian Federation	56	4.2	Egypt	52	5.0	Colombia	36	4.3
Egypt	56	4.2	Pakistan	50	4.8	Poland	33	3.9
Austria	48	3.6	Ukraine	49	4.7	Romania+ Egypt	29 29	3.4 3.4
Total of upper 10	1,339	100	Total of upper 10	1,044	100	Total of upper 11[1)]	844	100

4. Mechanical Engineering and Process Engineering			5. Human Medicine		
Origin	**Number**	**%**	**Origin**	**Number**	**%**
China	310	38.1	China	223	33.1
India	98	12.1	India	107	15.8
Iran	90	11.1	Syria	88	13.1
Turkey	72	8.8	Iran	47	7.0
Russian Federation	49	6.0	Poland	38	5.6
Syria	46	5.7	Russian Federation	33	4.9
Vietnam	41	5.0	Egypt	33	4.9
Indonesia	39	4.8	Greece	31	4.6
Iraq	35	4.3	Italy	28	4.2
Ukraine	33	4.1	Bulgaria + Turkey	23 23	3.4 3.4
Total of upper 10	813	100	Total of upper 10[2)]	674	100

[1)] As Romania and Egypt have the same number of students enrolled (29) both are listed.

[2)] As Bulgaria and Turkey have the same number of students enrolled (23) both are listed.

Source: Based on data from DAAD and DZHW (2013)

5. Policy framework to attract international students to Germany

Due to an unfavourable demographic development and a deficit of German students inscribed in areas which are in increasingly short supply on the labour market and the fact that Germany seems to lose ground on the global university market the policy focus has shifted to attracting international students.

Polices which have contributed to attracting international students to Germany range from the "Bologna Process", over high-quality courses taught in English, up to low tuition fees, and favourable work permits for students which is particularly important for self-financers.

5.1 Economic and political framework

As one of the highest per-capita income countries in the world, endowed with excellent universities, Germany generally is attractive for international students. Moreover, its geographical location in the centre of Europe, its long tradition of international academic exchanges, and its stable political situation has made it a preferred host (Isserstedt and Schnitzer 2005). Still, active efforts for gaining additional excellent international students are necessary, in particular as over the early 21st century Germany's position in the international ranking has permanently declined.

Policymakers in Germany see foreign students as a potential resource of human capital as well as an important component of the country's international policy. For an export-oriented nation like Germany, with a history of violent conflicts with its neighbours this last aspect is particularly important. Germany faces labour shortages in particular in MINT qualifications and also in the health sector. Among the causes for that situation is the fact that German students prefer to enrol non-MINT areas

(Mayer 2013). Although between 2005 and 2011, the number of students starting with natural sciences and mathematics increased from 63,374 to 76,803, and those with human medicine from 15,242 to 20,075. (Statistisches Bundesamt 2013), these subjects are characterized by comparatively high drop-out rates, which are considerably above the average of other disciplines: in machinery, electric engineering, mathematics, informatics, and construction engineering more than 50%, and in physics and chemistry around 40% from the 2010 cohort who had started at universities dropped out without graduating (Heublein et al. 2012). At advanced technical colleges the drop-out rates in MINT areas are lower than at universities, but with 30% still above the average.

Moreover, a considerable part of Germany's highly qualified emigrate to other countries and have to be substituted. Between 2001 and 2011, for example the number of physicians who left Germany has steadily increased from 1,437 to 3,410. In 2012, a sharp decline to 2,241 was registered (Bundesamt für Migration und Flüchtlinge 2014) which probably was largely due to the economic crisis in other countries and hence might be transitory.

5.2 The Bologna Process

Germany takes part in the so-called "Bologna Process", the European-wide initiative to create a single European Higher Education Area in particular by ensuring comparability in the standards and quality of higher education certificates. For that purpose, in 1999, it signed the "Bologna Declaration"[3] together with 28 other European countries. The major objective of this agreement is to promote intra-European academic mobility. In addition, it aims to enhance the attractiveness of European tertiary education, especially as compared to that of the USA (IOM 2008). The "Bologna Process" and the

[3] The "Bologna Process" is named after the city of Bologna where the Agreement was signed.

related "Lisbon Strategy"[4] are framing the European response to globalization in higher education (OECD 2009). The first practical step was to change the degree structures into an undergraduate-graduate (bachelor-master) system, and to establish a European Credit Transfer System (ECTS) to ensure the comparability and mutual recognition of degrees. Later on the agreement was extended to a "European Qualifications Framework", i.e. the concerted regulation of competences and learning outcomes at curriculum level, and initiatives for enhancing quality assurance and accreditation (OECD 2009). Since 2005, the program has been gradually broadened to the reform of PhD studies focusing on the length and structure of the respective programs, interdisciplinarity, supervision and assessment (OECD 2009).

5.3 Measures taken and benefits provided at the national level

In addition, Germany, at the national level, has undertaken a broad variety of measures to attract international students. In particular since the late 1990s, the number of specific master courses offered in English language has expanded tremendously and funding possibilities for international students at the same time have expanded, promoted essentially with the aim to enhance the competitiveness of German institutions with the Anglo-Saxon countries on the global market for higher education. In 2014, the DAAD listed 748 international English language programs (including bachelor, master, PhD, language and preparatory programs) offered at German institutions of higher education on its website (DAAD 2014). In 2005, this had been just 400 (Teichler 2007).

At the same time, knowledge of the German language is essential for managing daily life in the country and for getting access to its culture and

[4]The aim of the Lisbon strategy was to make the EU the most competitive and dynamic knowledge-based economy in the world by 2010. It was set out by the European Council in Lisbon in March 2000.

society. Hence, it remains a necessary tool for those who want to study and live in Germany (Mayer 2013). To take care of this, the Goethe-Institutes[5] world-wide provide information on the German culture and language as well as other aspects related to Germany through 159 institutes, including 12 liaison offices, in around 100 countries (Goethe Institutes 2014). They offer a broad range of courses from language training over so-called "integration courses", up to teaching qualifications in German as a second language (Goethe-Institute 2014).

Scholarship programs are a major instrument used to attract international students in a targeted way. Germany promotes the internalization of its higher education through the German Academic Exchange Service (Deutscher Akademischer Austauschdienst, DAAD), which finances ambitious mobility grant programs for students and academic staff, participates in international education fairs, and finances publicity campaigns abroad (Mayer, 2013).

Part of Germany's attractiveness is the fact that it offers graduate courses free of charge or with comparatively low tuition fees also to foreign students (Ackers and Gill, 2008). Foreigners have the same rights of access to bachelor and master programs as Germans.

In the early 2000s German visa regulations and entry procedures for international students and researchers have been gradually liberalized; work permits are easier to receive; proof of financial security has been facilitated; and the recognition of foreign grades has improved and language ability requirements were reduced or at least tailored to the needs of student's curriculum (OECD 2004). However, for getting a visa they have to prove that

[5] The Goethe-Institute is a globally active cultural institute run by the German government. It is primarily responsible for the dissemination of the German language and to support the international cultural cooperation.

they are able to sustain themselves by depositing 8,100 € per year[6], if nobody else in Germany guarantees to secure their livelihood.

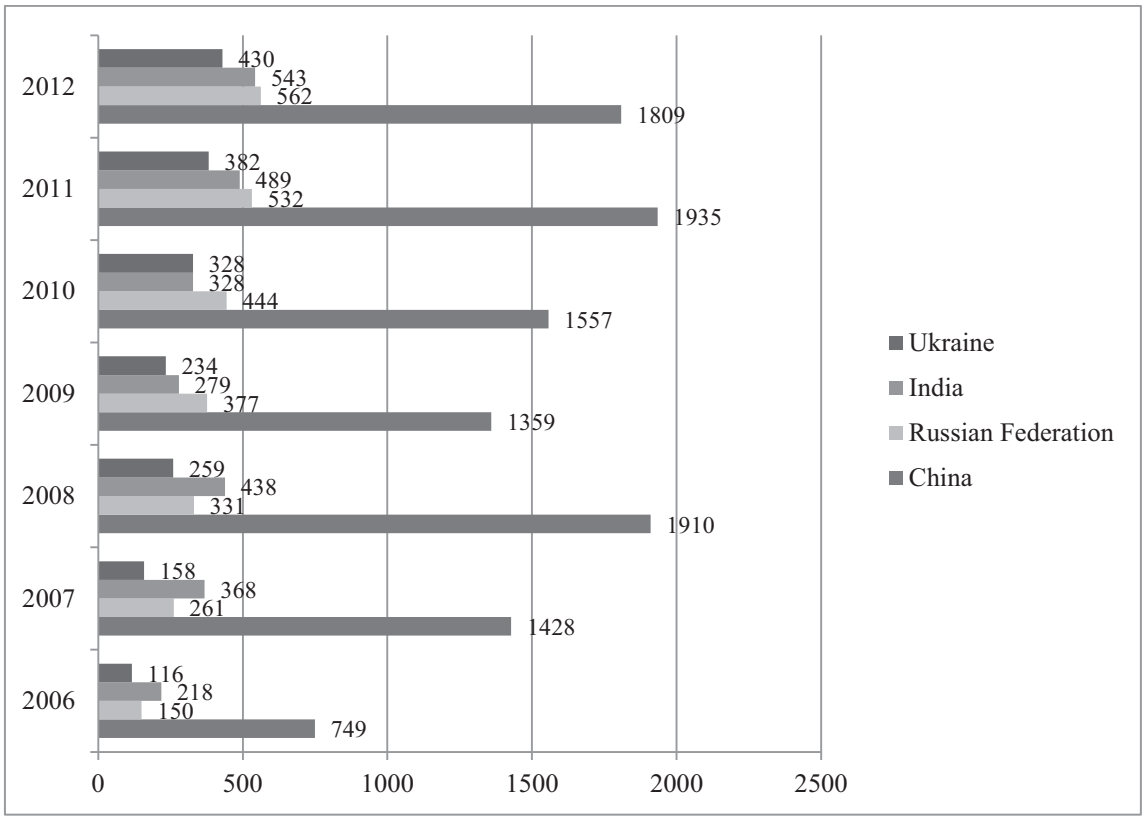
In 2012, one quarter of the international students did not receive an official recognition of their foreign degrees when they arrived in Germany; in 2009 this share was still 40% (Apolinarski and Poskoswsky 2014). Also, administrative admission procedures for PhD students are comparatively uncomplicated. German professors, as part of their academic freedom, have the right to accept PhD candidates independently provided they fulfil the University's general rules (Kehm 2007). The usual pre-condition is a master degree which is recognized in Germany.

The number of hours international students from Third Countries are allowed to work is restricted by German law to 120 full days or 240 half days per year (§16 Abs. 3 Aufenthaltsgesetz) which is a significant improvement as compared to the previous regulation which was 90 days, resp.180 half days.

International students from Third Countries are permitted to stay in Germany for up to 18 months after graduation to look for a job[7]. Moreover, Germany grants recent graduates from Third Countries a special work permits, thereby smoothing their transition from education to the labour market (OECD 2009a). Graduates from EU countries are free to look for employment in Germany for an indefinite time. As shown in Fig. 1 in particular Chinese take up an employment in Germany after their graduation; their number has increased from 749 in 2006 to almost 2000 in 2011. They are followed by Russians with less than half that number, Indians and persons from Ukraine.

[6] Status 2014
[7] Status 2014

Fig 2: Graduates from Third Countries starting professional employment in Germany



Note: Figures for 2012 were extrapolated after 07/12, assuming that for the rest of the year employment trends will continue with the same pace and pattern.
Source: Bundesamt für Migration und Flüchtlinge, 2014

Also, the opportunities for academic employment at German institutions of higher education have increased (Table 6) whereby Chinese nationals are the largest group within the foreign academic staff. Between 2007 and 2011, their number has increased from 1,289 to 2,111, i.e. by 62%. On the second and third place are Italians and Austrians. The second most important non-EU country is Russia, followed by USA. Although being on top in PhD programs, Indians rank only 7th among the international academic staff in Germany.

All these efforts are supplemented by campaigns abroad to promote Germany's higher education sector. In 2000, in a joint initiative of the German Federal government and the Federal States launched a series of DAAD-run projects with the aim of doubling the number of international

students in German universities. For example, the "Joint Initiative for the Promotion of Education and Research in Germany" (JIPERG 2014) was initiated as a national level marketing campaign[8]. In addition, support programs were created at Federal-State level to develop internationally attractive English-taught curricula, to establish transnational networks, to reform graduate and PhD education, and to award more scholarships.

Table 6: Academic[1)] staff of foreign nationality by countries of origin

Country	2011	2007	Growth rate (%)
China	2,111	1,298	62.6
Italy	2,095	1,287	62.8
Austria	1,978	1,510	31.0
Russian Federation	1,854	1,397	32.7
United States	1,684	1,072	57.1
France	1,563	1,226	27.5
India	1,459	810	80.1
Spain	1,445	1,033	40.0
United Kingdom	1,284	1,000	28.4
Poland	1,225	917	33.6

[1)] Including artistic staff
Source: Based on data from DAAD and DZHW (2013)

In 2000, as a complementary action, the higher education institutions established an own marketing consortium, the Guide to Academic Training and Education (GATE), which co-ordinates image and marketing campaigns in specific countries. In 2014, GATE funded under the JIPERG, has more than 100 institutional members. In addition, DAAD offers the service of its network of 15 international branch offices and 55 regional study and information centres implementing GATE programs and image campaigns (GATE 2014). Immediately after the start of the GATE activities, the number of international students in Germany increased by 12%, particularly from the

[8] For details see Federal Ministry of Education and Research (2014)

target campaign countries China (by 40%), India (by 27%), Thailand (by 20%), Russia (by 17.5%) and Vietnam (by 14%) (OECD 2004: 112-113).

General measures taken to enhance the excellence of German universities have corresponding impacts on their attractiveness. Since the early 2000s, Germany undertakes considerable efforts to improve the quality of its universities, like the "Excellence Initiative" which was launched in 2005 to boost internationally visible, high-quality research in Germany. Within this framework, the government allocated special grants (in total an amount of € 1.9 billion) to different universities for enhancing their competences and institutional strategies with the aim to strengthen their international competitiveness (OECD 2009).[9]

In fact, looking at different international university rankings, from the QS World University ranking[10] to The Times Higher World University Rankings[11], the top-ranked institutions are located in the USA, followed by GB. German institutions, however, are not found among the top-50 anymore, indicating that they do not promise to provide the most excellent education and training services according to the dominating indicators, which are also major decision criteria for international students and for those financing their studies.

6. Socio-economic situation: International students in Germany

The figures about the international students' social and economic situation presented in this section refer to the year 2012. The analysis is largely based on data provided by the annual surveys of the German Students Association

[9] In the first program phase these were these were the Universities TU Aachen, Free University Berlin, Freiburg, Göttingen, Karlsruhe, Konstanz, Heidelberg, University of Munich and the Technical University of Munich (OECD 2009: 139)
[10] For details see http://www.topuniversities.com/subject-rankings/2014
[11] For details see www.timeshighereducation.co.uk

(Deutsches Studentenwerk) (Apolinarski & Poskoswsky 2014). In 2012, the answers of 985 students were used which is regarded as representative by the publishers. Region-wise, the respondents were categorized into those from East Europe, West Europe (and partly European Union and non-EU Europe), East Asia, rest of Asia (named hereafter "Non-East Asia"), America, Africa, and Australia/Oceania.

Personal characteristics

In 2012, almost half of the international students in Germany (43%) came from upper middle income countries[12], while the share of lower and lower-middle income countries was 22%, and that of high-income countries 32%. 49% came from Europe, a decline by 11%age points since 2006, and 31% from Asia, an increase by 5%. Their average age was 26.4 years; 67% were below 28. Those from non-East Asia have the highest average age with 26.7 years; almost one quarter of them is 30 or older. Overall, more men are enrolled at higher level study programs than women.15% of the males but just 9% of the females are in PhD programs while this is the reverse in bachelor programs in which 40% of the females, but only 34% of the males are studying.

17% are married; with the highest share found among Non-East Asians) with 21%. 11% have children; with 17% their share is particularly high among the students from low income countries, and region-wise among the Non-East Asians with 13%; it is the lowest among the East Asians with 3%.

[12] The categories „low and lower middle income countries", „middle income countries", and "high income countries" correspond to the World Bank definitions.

Financial situation

About half of the international students (53%), 34% from low and lower middle-income and 64% from high-income countries, receive financial support from their parents; for 17% this is their only source of funding. Almost the same percentage (52%) earns own money, on average 474 € per month. 15% live exclusively from their own earnings, with an average amount of 805 € per month. Both funding sources have been quite stable over the previous decade.

23% receive a scholarship, almost half of the PhD students (46%), 21% of the master students, and 10% of the bachelor students. Most of the scholarship holders (43%) have a grant from some German institution, 29% from their home country, 20% hold a European scholarship, and 2% one from an international organization. The share of scholarships increases with the home country's per capita income, from 16% in low and lower middle income countries to 33% in high-income countries.

Most of the scholarships are awarded to students who are enrolled in mathematics and natural sciences (28%), closely followed by engineering (with 27%); another 22% go to medicine and health sciences. On average, scholarship holders receive € 719 per months, whereby those from poorer countries receive the highest (with 895 €) and those from high-income countries the lowest (552 €) amount. It increases with the level of studies, from € 487 at the bachelor level to € 1,239 for PhDs.

For many international students in Germany, working for money is necessary to secure their livelihood. There are clear differences between the country groups: while on average students from low and lower middle income countries receive 45% of their income from paid jobs, this applies to only 25%, resp. 26% of those from middle and high-income countries. Working for money is particularly important for students from low and lower middle

income countries: 66% of them have such jobs, while this applies to just 51% of those from high income countries. Obviously, a large share of the students from low-income countries would not be able to continue without the possibility to earn money.

60% of all the international students and 80% of those from low-income countries had a residence permit allowing them to work for money for a maximum of 90 full days. 34% of the students from East Asia and 49% of those from Non-East Asia are economically active during the lecture term. On average they spend 36.4 hours of a typical semester week for lectures and home studies, and 8.2 hours on a paid job. Those who work for money on average spend four hours per week less for their studies than the others. Being without scholarship increased the average number of hours spent on a job by six and decreased those spent for studies by five hours per week as compared to scholarship holders. The hours spent for earning money increase with the students' age, from 5.1 hours per week for those below 21 to 13 hours for those aged 28 to 29 years.

Most of the students working for money had temporary jobs (41%), in which they earned an average hourly wage of 8 €; 27% were employed as students assistants which brought them around 9.50 €. The majority (78%) declared that having a job is indispensable for securing their livelihood, followed by the wish to be independent of the parents (59%), and to be able to afford a higher living standard (52%). Another 52% emphasized that they accepted a job primarily for gaining experiences.

German language competences

More than half of the foreign students had acquired German language competences already in their home country; 17% only learned German after they had arrived in Germany. 8% started their studies without any knowledge

of the German language; this share increased with the aspired graduation level, from 3% on the bachelor level up to 25% at PhD level, whereby in general females had better German language competences than males; for example at PhD and master level, 21% of the men, but only 9% of the women started their studies without knowledge of the German language. 51% of the international students took further German language courses over the time of their studies. 69% underwent a German language test, but this share was significantly lower at PhD level with 47% than in lower levels (75% at bachelor level).

Choice of Germany as a study place

61% of the international students declared that Germany was their first choice when selecting a foreign country for their studies; 17% would have preferred the USA and 10% GB if they would have been in a position to choose freely. For 16% it was their second choice and for 23% neither their first nor their second choice; most of them would have preferred to study in the USA instead. For almost 80% of those from low-income countries Germany was the preferred option. The share of those coming on first-choice basis was particularly high among the East Asians with 70% and particularly low among the non-East Asians with 56%. Considerable difference show up according to the fields of studies: while 66% of those studying engineering emphasized that Germany was their first choice, this applies to only 55% of those enrolled in mathematics and natural sciences and 56% of those in economics and law.

More than half of the international students became aware of Germany as a potential country for their higher studies by information provided by family members and friends; 35% received that information from their schools and universities, 34% by persons who studied already in Germany and 29% by

internet search. Just 13% were attracted by marketing activities of German institutions. East Asian students showed a specific background: 56% of them received their information from their schools and universities, while this applied to only 32% of those from other regions. The internet was particularly important for the decision process of PhD students; with 43% using it as their first resource, which applied to only 28% of the other students. Still, for getting more detailed information about studying in Germany the vast majority (78%) had used the internet.

Most of the international students (65%) came to Germany to improve their German language competences, closely followed by the conviction that Germany is a technologically high developed country (61%), and to get to know the country[13]. For 46% it was important that Germany was financially affordable for them, a reason which was particularly important for students from South Asia. 81% expect that their career perspectives improve by their studies in Germany; 73% wanted to acquire specific competences. For 71% the reputation of a specific university was the reason to come to Germany; this share was particularly high among those from East Asia with 88%.

Asked about the problems they meet in Germany, the most frequent one mentioned was finding an accommodation (by 42%), followed by lack of contact to German students (for 41%), orientation in the German study system (41%), financial issues (39%), getting into contact with the German population (37%), and communication in German language (32%). Overall, students from South East Asia met above average problems, in particular with regard to contact to the population, to fellow students and to professors, and with communication in German language.

[13] Multiple answers.

Using supportive services

78% of the international students consider advisory services for study issues as important for getting along. For around three quarters this applies also with regard to information services about financial issues, students' tutorials, and communication opportunities with German students. However, only 37%, 17%, 49%, and 25% respectively had actually used these services which in all cases was significantly less than three and six years before. German language courses are considered as important by 70%, but only 52% had taken part in such courses. Altogether, the majority of the students was satisfied with the quality of the services they had used.

Recommending Germany as study place

54% of the respondents would recommend Germany as a study place without any reservation, and another 31% overall would recommend it. The share of those who would recommend or highly recommend Germany is similar in all country income groups, ranging from 86% among those from high-income to 81% for those from low-income countries. Those from Europe (with 87% from West and 86% from East) would recommend it more than those from East Asia (83%) and the Non-East Asians (79%). While altogether 90% of the master students would recommend it, this applies to only 82% of the bachelor and 85% of the PhD students.

Still, the drop-out rates among international students are quite high. 46% of all international bachelor students of the reference group 2010 in Germany finished their studies without graduation (still reflecting a long-term decline in the drop-out rates), with a significant gender difference: the drop-out rate was 54% among the males, but just 39% among the females (Heublein et al. 2012). The drop-out rate was also comparatively high among African students (with 68%), those from West Europe (with 61%), and those from Latin

America (with 58%), while, in contrast, it was particularly low among the East Asians, with just 25%. The differences between regions is also pronounced in the magister and diploma degree programs: while 80% of the West Europeans and 67% of the Latin Americans dropped out of their studies, this applies to only 20% of the Chinese (Heublein et al. 2012). According to Heublein et al. (2012), these high drop-out rates among foreigners are mainly due to integration problems and differences in the educational culture between the students' country of origin and Germany.

7. Perspectives, conclusions, and policy recommendations

It has been shown that Germany is an attractive destination for international students. Altogether, Asians are the most important group among the foreigners studying at German universities, in particular at the higher study levels and in fields of expertise which are especially in demand on the German labour market. However, in the global competition for international students the country has been losing ground over the early 21st century.

In the next years to come, the global Economic Crisis which has started in 2007 is expected to attenuate the international movement of students, as many countries are stuck in recessions, with shrinking state and private budgets, thus restricting the available financial means required for studying abroad, based on family support as well as government scholarships (OECD 2013). In the longer term the numbers of international students are generally expected to expand tremendously, yet. Under different scenarios in terms of worldwide economic and demographic growth, the OECD (2009) estimates the number of international students to reach up to nine million in 2025, with significant differences between individual countries with regard to their share in that movement (OECD 2009). Similarly, Goddard in Davis and Mackintosh (2011) forecasting a total number of higher education students of 262 million in 2025, i.e. more than the double of the early 2010s, and half of this growth occurring in India and China, predict that at that time eight million students will travel abroad for higher education. This development will be fuelled by an annual growth of more than 3% p.a. in Africa, the Middle East, Asia and Latin America, where larger numbers of young people will enter the peak education ages, study participation rates are sharply raising and students are increasingly integrated into international knowledge networks.

How is Germany expected to fare in this global market for talents?

Between 2005 and 2011, the share of international students in Germany's total student population was far below the OECD average of 19.7% (OECD 2013). On the other hand, with 23%, Germany has the second-highest share of foreign students in engineering, manufacturing and construction and thus of the most sought-after qualifications; only Sweden's share is higher with 32%. At the same time there is a strong competition by other OECD countries which over the previous decade have launched numerous national programs to attract excellent international students (OECD 2013). Since the early 2000s, for example, several countries have eased their immigration policies to encourage the temporary or permanent immigration of international students which makes these countries more attractive to students and strengthens their labour force. (OECD 2011).

Furthermore, Germany has not kept up with competing countries in essential areas. So, for example, Germany does hardly recruit international students into advanced research programs. All other OECD countries have larger shares of international students enrolled in such programs than in any other tertiary-level programs, on average 19.6% (OECD 2013): "These large proportions of international or foreign students may reflect the attractiveness of advanced research programs in these countries or a preference for recruiting international students at higher levels of education because of their potential contribution to domestic research and development, or the potential for recruiting these students as highly qualified immigrants." In Switzerland, e.g., almost half of the students enrolled in advanced research programs are foreigners, and in 12 out of the 25 countries reporting to the OECD[14] more than 20% of all students in these programs are international, in Germany it is only 6.4%. France has the highest share of foreign students with 40%. In

[14] Altogether, there are 34 OECD countries.

China, 25%, in France 11% and in Brazil 10% of all foreign students are enrolled in advanced research programs. “All of these host countries are likely to benefit from the contribution of these highly qualified international students to their research and development programs” (OECD 2013:312).

In addition, it will remain a challenge to compete with English-speaking countries. In spite of Germany’s increasing efforts to offer educational services in English, the language barrier skill constitutes a major obstacle against studying in Germany.

Moreover, more and more “New Players” investing in universities of excellence enter the international market for higher education, and also offer scholarships. They are expected to attract an increasing share of those who are interested in studying abroad. While traditionally the English-speaking countries, in particular after World War II, had dominated the international education market, this constellation is undergoing a rapid change in the early 21st century (Davis and Mackintosh, 2011), as traditional source countries, such as Singapore, Malaysia, Thailand and the Middle East “are developing their own capacities to offer education to outsiders” (Maslen 2012). So, Singapore plans to attract 150,000 foreign students by 2015, Malaysia and Jordan 100,000 each by 2020 and China to 300,000 by 2020, up from a number of 200,000 in 2010 (Davis and Mackintosh 2011).

In that context, if Germany aims at attracting highly qualified international students with sought-after qualifications as a potential resource for its own economic development it might have to rethink its strategies. Although low tuition fees are generally an attraction factor, they might not be appropriate for filtering in-coming international students under the aspect of attracting excellence.

Unlike other major destination countries, Germany cannot rely on a stable basis of traditional sources of in-coming international students. Although

located in the centre of Europe, the country has a comparatively low share of international students coming from neighbouring countries (14.3% in 2011, as compared to an OECD average of 20.6% and an EU-21 average of 23.3%) (OECD 2013). Also, it has the lowest share of students from countries with the same official language (8.9% in 2011 against an OECD average of 25.4% and an EU-21 average of 26.7%) (OECD 2013). Hence, more active efforts are required for attracting students from abroad, in particular in times of sluggish conditions on the international market for higher education.

The objectives of countries offering their services on the international market for education in the early 21st century generally are not only to attract more international students, but to be appealing to those with the right profile. For Germany these are those with MINT qualifications and those coming from (economic or political) partner countries. Under the given circumstances, the following general strategies might help Germany in attracting a larger number of international students in general and with the desired profiles in particular.

To overcome their linguistic disadvantage German institutions would have to continue their efforts to offer more courses and programs in English in particular as the on-going expansion of English language education in schools and high-schools all over the world creates an expanding market potential for educational services offered in English.

Visa policies towards students and university personnel are an important determinant for the internationalization of higher education, and can be used as an essential filter for attracting those who are preferred for various reasons. To take care of its qualifications and nationality preferences, Germany might have to adapt its application procedures for visa and residence permits and also spread more information about these procedures at international level.

Marketing of higher education services is an important way of increasing the international visibility and reputation of the domestic services. However, as

shown above, only a minor share of those who arrived at the idea to study in Germany were directly inspired by Germany's marketing efforts. Therefore, the German government and the higher education institutions should intensify their campaigns by developing branding and advertising initiatives, for example, by more intensive and more visible participation in international exhibitions or by establishing branch campuses and international placement offices of their universities in different countries.

The international mobility of students involves brain drain from some countries and brain gain by others. Related to that and to questions of returning home, staying, or moving on, "brain circulation" attracts increasing attention as facilitating circular migration could be useful to the home as well as the host country, an idea which is also prominent in Germany. This could be promoted by offering incentives for international students to re-enter Germany after their return home, for further studies, courses or academic exchange visits. For that purpose, Alumni programs and circular migration arrangements associated with multi-entry, multi-annual visa for short-term professional work under flexible contracts should be developed, for the benefit of graduates, their home countries and Germany.

In general, an enhanced perceived excellence of German universities probably would help to attract more students from abroad. To attain higher expenses for research and teaching might be necessary, considering the fact that Germany spends a lower share of its public budget on research and academics than most other OECD countries. In 2008[15], the per-student expenditures for core educational services in tertiary education amounted to 8,788 US$, which was below the OECD average of 9,148 US$, and in particular below the US expenditures of 10,995 US$ which topped the ranking (OECD 2011). A comparison with other OECD countries provides an even more unfavourable

[15] No comparative data including Germany are available for later years.

picture when the development of these expenditures is considered: taking the year 2000 as an index of 100; Germany's core educational services per student between 1995 and 2008 increased from 91 to 107 while the OECD average was growing from 98 to 114 (with Poland on top with a development from 107 to 163). At the same time, the USA showed a performance significantly below the German on yet: it developed from 77 to 98.

Overall, there still seems to be a considerable lack of knowledge about how to target and attract international students of different qualifications, and nationalities. This calls for corresponding research activities. As an example, undergraduate mobility, and in particular the motivations driving, respectively hindering it has been a neglected aspect although it provides a seed for future high-skilled labour force (Ackers and Gill 2008: 10). Also, studies of graduate students and their working and location intentions are essential in that context. There is also a need to broaden the analysis to an international comparative dimension, specifically approaching the question of how the experience of international students in Germany compare with those in other countries. Data about foreign students' post-graduate mobility behaviour are still insufficient, and therefore performing "trace studies" among different groups of international students and compiling a more comprehensive and detailed understanding of human capital circulation in the global landscape would provide valuable input national policy makers and institutions.

Annex

Table A1: Foreign students in Germany 2012

Country	Number	Country	Number	Country	Number
China	18,323	Colombia	1,238	Nigeria	410
Turkey	12,222	Serbia	1,067	Ireland	375
Russian Federation	10,007	Belgium	1,031	Palestine	368
Austria*	8,069	Bosnia/ Herzegovina	1,006	Ecuador	357
Norway	7,327	Lithuania	971	Netherlands	356
Bulgaria	6,491	Croatia	950	Armenia	347
France	5,951	Slovakia	884	Ghana	345
Ukraine	5,875	Egypt	879	Afghanistan	341
Italy	5,356	Montenegro	869	Argentina	321
Cameroon	5,197	Poland	826	Venezuela	307
Spain	5,011	Uzbekistan	779	Slovenia	297
India	4,312	Finland	771	Iraq	293
United States	3,959	Kazakhstan	694	Ethiopia	286
Korea, Rep.	3,513	Bangladesh	685	Togo	284
Luxembourg	3,163	Latvia	627	Kenya	270
Romania	2,890	Thailand	626	Cyprus	245
Iran, Islamic Rep	2,757	Malaysia	623	Singapore	219
Greece	2,749	Portugal	612	Gabon	204
Morocco	2,675	Lebanon	610	Philippines	177
Switzerland	2,416	Peru	589	Saudi Arabia	167
Tunisia	2,307	Albania	585	Côte d'Ivoire	165
Brazil	2,149	Chile	576	South Africa	164
Georgia	1,919	Jordan	572	El Salvador	164
Mexico	1,668	Canada	570	Bolivia	159
Hungary	1,660	Estonia	540	Algeria	158
Japan	1,628	Kyrgyzstan	534	Sri Lanka	135
Syrian Arab Republic	1,570	Sweden	521	Uganda	132
Israel	1,533	Azerbaijan	511	Senegal	129
Pakistan	1,451	Mongolia	510	Benin	111
Czech Republic	1,450	Nepal	501	Zimbabwe	110
Viet Nam	1,444	Yemen	490	Costa Rica	104
United Kingdom	1,411	Australia	470	Guinea	103
Indonesia	1,384	TFYR Macedonia	457	Tajikistan	103
Belarus	1,364	Denmark	441		

Source: Based on data from DAAS & HIS-SF (2014)

Chapter 2: Students from India

Indian students in Germany in the context of the increasing shortage of a highly-qualified labour force

Beatrice Knerr and Rebecca Tlatlik

Abstract

Germany, like many other countries, is faced with an increasing shortage of highly-qualified labour force. In this context international students are perceived as a valuable resource of human capital and, since the mid-2000s Germany's policymakers have supported the strategy of seeking to attract more of them and retain those who successfully graduate in one of the sought-after specializations. Indian students in particular are considered as a potential asset and hence a target group. In its pursuit of international Indian students though, Germany finds itself in an increasing global competition. This article gives an overview of Indian students' presence in Germany; it explains which strategies are applied to attract more of them, and examines the factors that might prevent Indian students from choosing to stay in Germany after their graduation.
Key words: Indian students, German labour market, international migration of highly-qualified

1. Introduction

At the beginning of the 21st century Germany is facing a diminishing young labour force, resulting from a decade-long decline in birth rates. Representatives from politics and business in particular express their concern over the increasing lack of highly-qualified human capital and agree that this will adversely affect the country`s prosperity since the availability of an educated and skilled labour force is seen as a fundamental prerequisite for its economic development (Czernomoriez 2009:17). Immigration of highly-

qualified persons has been discussed as a partial solution to the problem, and towards this end, a number of far-reaching policies have been implemented in German immigration law since 2000. In this context, international students have been recognized as a possible resource of human capital for Germany. Over the 21st century their number has increased on a global scale, from two million in 2001 to 4.3 million in 2011 (IIE Centre for Academic Mobility Research 2013), and Germany hosts a significant share of them. From winter term 1993/94 to winter term 2012/13 the number of those enrolled in German institutions of higher education almost doubled from 87,000 to 185,000 (DAAD and DZHU 2012).

In order to attract a larger share of the international student population, Germany has introduced a Bachelor/Master system in which an increasing number of subjects are taught in English. Its strategy concentrates on retaining students of sought-after qualifications in the country after their graduation, with a clear preference for those with so-called "MINT qualifications", i.e. mathematics, informatics, natural sciences and technical engineering. In this area, however, Germany is competing with many other countries which are facing similar problems. In 2012 Germany hosted the 5th greatest number of international students (after the U.S., UK, France, and Australia), accommodating 6% of all internationally enrolled students (IIE Centre for Academic Mobility Research 2013).

Amidst the debate over how Germany might close its gap between the demand for and supply of highly-skilled labour, Indians have attracted particular attention. Germany is currently making efforts to attract and retain Indian students after their graduation, mainly because they constitute a large share of the international students in MINT subjects and are likely to reach a high level of qualification. However, student migration from India to Germany is not yet to a level that would be desired by German policymakers;

furthermore, only a minor share of them are remaining in the country after graduation. This article focuses on the following questions: how the Indian student community in Germany has developed; why Indian students do not come in larger numbers to Germany; and why more of them do not stay after their graduation. It intends to provide insight via a literature review as well as an analysis of Germany`s governance of migration using available secondary statistical data.

The next section (2) explains Germany`s motivation to attract more Indian students; section (3) gives an overview of facts and figures concerning Indian students in Germany; and section (4) presents the policy framework and the strategies that have been employed to increase the attractiveness of German universities. Section (5) summarizes and concludes.

2. Germany`s motivation to attract Indian students

The key to economic growth and prosperity in today's world is the availability of human capital and "in many countries, the knowledge-based sectors have become engines of growth" (Varghese 2008:9). This surely applies to Germany; however, the country's pool of labour force has been shrinking since the 1990s. The average number of children per women in Germany is just around 1.4, a figure which has been stable for many years (Statistisches Bundesamt 2012). The potential labour force is predicted to drop from 44.6 million in 2010 to around 38.1 million by 2025 (Bundesagentur für Arbeit 2011:3). The resulting decline of a young labour force, as well as of their share in the work force, implies an erosion of innovative power (Hinte et al. 2011:3). The changing age structure also means a reduction in the number of people paying into the social security system and therefore foretells an erosion of the services which this system will be able to provide out of their own financial resources. At the same time Germany faces

the problem that many young people leave school and university without a degree. In 2009 around 7% (64,000) dropped out of school and 20-30% of students left university without a degree (Bundesagentur für Arbeit 2011:18). In addition, Germany is losing many highly-qualified nationals to other countries. In 2012, for example, 115,028 German citizens entered into Germany but 133,232 left the country (Bundesamt für Migration und Flüchtlinge (BAMF) 2011:27)[1].

Significant numbers of immigrants would be required to counterbalance this development. There are various estimates of how large the gap between the supply of and demand for highly-qualified labour force will be. According to a study by the business consultancy McKinsey & Company, two million highly qualified will be lacking in the German industry by 2020 (Bundesagentur für Arbeit 2011:7), while the Institute for the Future of Labour (Institut zur Zukunft der Arbeit, IZA) expects that there will be a deficiency of 240.000 engineers in the same year (Bundesagentur für Arbeit 2011:3). Highly-qualified immigrants could reduce these shortages and at the same time, lead to higher, as well as, more equally distributed incomes, because according to Hinte et al. (2011), every highly-qualified employee would create demand for an additional two to three lower skilled jobs (Hinte et al. 2011:5). This, in turn, might increase the wage level of lower skilled workers while that of the highly-qualified would increase although less-so than if there was no immigration.

In 2012, 4,318 of the 34,887 labour migrants from non EU-countries[2] who entered the German labour market were Indians, and thus formed the biggest nationality group, followed by Croatian (3,994) and U.S. (3,482) citizens.

[1]In general, between the early 1990s and the mid-2000s Germany experienced a leakage of highly-qualified labour force, while attracting are larger number of lower-skilled people into the country under various immigration categories (see, e.g., Knerr 2008).

[2] §18 of the German Immigration Law regulates the admission of foreigners from Third Countries for the purpose of employment.

Further, in the category of those who migrated to Germany for the purpose of taking up a skilled job under the Blue Card system,[3] Indian nationals were the most important origin group with 28% out of the total of 2,920 persons. Altogether 94.2% of the Indian nationals who entered Germany for employment in 2012 were taking up a high-qualified job[4] (Ausländerzentralregister cit. from BAMF 2014). This was the highest share among all immigrant nationality groups, and with 4,067 specialists Indians also had the absolute highest number out of a total of 22,695 specialists. 2,563 of the Indians who came to Germany did so for academic employment (Bundesagentur für Arbeit, cit. in BAMF 2014). Also here, Indians formed the biggest nationality group, followed by the Chinese with 412 persons. However, the majority of these workers leave after a few years, usually after having significantly upgraded their skills and qualifications. In 2012, for example, 17,474 Indians arrived in Germany but at the same time 11,262 left (BAMF 2014:21).

Considering, on one hand, the strong potential of the pool of highly-qualified Indians for the international labour market and, on the other hand, the high likelihood of Indians to leave Germany after a relatively short stay - it appears useful to take a closer look at the community of Indian students in Germany.

[3] For details see Knerr (2009)
[4] According to § 18 section 4, p.1, Aufenthaltsgesetz (Immigration Law)

3. Indian-German economic relationships that frame student mobility

Student exchange between India and Germany takes place within a larger framework of economic and political relationships between both countries which offer opportunities and incentives while simultaneously maintaining limitations. This section gives a brief overview of the development of Indian-German relations since the early 1990s, in order to contribute toward a deeper understanding of student mobility and the factors that play a role in Indian students' location decisions completion of their studies in Germany.

Table 1 highlights the differences in essential demographic and economic indicators between both countries in 2012 and the demographic expectations for 2025. India's population is more than 14-fold that of Germany`s while its per-capita income of 1,008 US$ is just 2% of Germany's when measured in real US$, resp. 8% when measured in Purchasing Power Parity (PPP). Although India is exhibiting considerably higher economic growth rates than Germany, it would take decades before catching up. This prosperity gap by itself indicates a significant potential for migration from India to Germany, and even more so due to the fact that India's population has a high share of young people ready to work. India's population in general is characterized by a low educational level with a literacy rate of only 66%. Still, there is a strong potential for the emigration of highly educated Indians, in spite of the increasing demand of its growing domestic economy, due to the increasing academic education of its large population.

Table 1: Economic indicators of India and Germany

Indicator	India	Germany	Relationship India / Germany
Population (´000)			
- 2013	1,236,687	81,471	14.6
- 2025	1,396,046	80,637	17.3
Per capita GDP			
- US $ nominal	1,503	42,597	0.035
- PPP international $	5,138	41,859	0.123
rank (all countries)	133	19	
Human Development Index	0.547	0.905	0.6
rank (out of 177)	134	9	
GDP growth, %, 2012	4.7	0,7	6.71
Median age, years	26.2	44.9	0.58
Population growth, % 2012	1.3	-1.7	
Literacy rate, %	61 (2001)	99 (2003)	0.62
GNI growth, %, 2012	3.1	2.5	1.2
Unemployment, youth total (% of total labour force ages 15-24) (national estimate)	10.7	8.1	1.3
Unemployment, total (% of total labour force) (national estimate)	3.6	5.4	0.7
Life expectancy at birth, total (years)	66	80	0.8
Population aged 0-14 (% of total)	29.4	13.2	2.2
Population aged 15-64 (% of total)	65.4	65.7	0.99
Population aged 65 and above (% of total)	5.2	21.1	0.3
Age dependency ratio (% of working-age population)	52.9	52.1	1.0
Age dependency ratio, old (% of working-age population)	7.9	32.1	0.3
Age dependency ratio, young (% of working-age population)	45.0	12.2	3.6
Population (Total)	1,236,686,732	80,425,823	15.4

Source: Based on data from World Bank (2014)

German companies are an important employer of highly-qualified Indians in India since many German high-tech companies consider the country a suitable location for outsourced laboratory and research work. In 2007, Robert Bosch GmbH, for example, had 3,000 Indian engineers employed in its research and development (R&D) centres in Bangalore - the biggest one outside of Germany - to design navigation systems and motor controllers. This labour force is competent, fluent in English and cheap; an Indian engineer earned

less than one-fifth of a German engineer in 2007 (Müller 2007), and the supply is strongly increasing. Each year around 400,000 engineers graduate at India`s universities, ten times more than in Germany (Müller 2007). While fast-growing German companies struggle to find sufficient numbers of engineers on the domestic market, they find that a straightforward way to recruit the required competence is by investing in India. In this way, technical competence has increasingly become one of India's most valuable export commodities. In Mumbai, Bangalore and Delhi, more than 5,000 Indian Siemens engineers work on software, medical techniques or drafts for future power plants (Müller 2007).

In contrast to the foreign direct investment (FDI) sector, a different picture emerges when it comes to bilateral trade between the two countries, and in particular regarding exports from Germany to India; these have considerably increased since the 1990s and reached 7,503 Mio. € in 2011, up from 5,281 Mio. € in 2007. While Germany mainly supplies high-tech products like machinery and chemicals to India, more than one-quarter of India's exports to Germany consist of textiles. Yet, the trade structure is changing with increasing shares of high-tech products in India's export spectrum. In 2011, India's exports to Germany were valued at 10,871 Mio. €, up from 8,192 Mio.€ in 2007.

4. Indian students in Germany

4.1 International destinations of Indian students

In 2012 the top destinations of internationally mobile Indian students were the United States with 97,120 persons, followed by the United Kingdom (29,713), Australia (11,684), Canada (8,142) and the United Arab Emirates (7,310).

Table 2: Top ten international destinations of Indian students

	Number	Share of total (%)
United States	97,120	51.3
United Kingdom	29,713	15.7
Australia	11,684	6.2
Canada	8,142	4.3
United Arab Emirates	7,310	3.9
New Zealand	7,248	3.8
Germany	4,312	2.3
Russian Federation	3,351	1.8
Ukraine	2,516	1.3
France	1,955	1.0
Total number of Indian international students	189,472	94.5

Source: UNESCO (2014) and own calculations

4.2 Specific measures targeting Indian students

In addition to the general strategies undertaken by the German government to attract foreign students and enhance international academic exchange, various policy measures have been enacted to attract specifically Indian students to Germany. One of them was called "Science-Express", an Indo-German collaborative project which started on 30th October 2007[5] and involved several German and Indian partners, including the Max-Planck-Society of Germany[6]. The project involved an actual train that travelled across India in order "to develop scientific temper amongst the masses and encourage students to pursue higher studies and careers in science"[7] in Germany. Furthermore, the German Federal Ministry for Education and Research (BMBF) directly encourages the expansion of scientific and technological cooperation between the two countries. An example of the strong effort to attract Indian students is the project "A new passage to India", which is

[5]Bundesministerium für Bildung und Forschung (2014)
[6] The Max-Planck-Society is a public German research organization launched in 1948. It runs 80 institutes, most of them located in Germany.
[7] Bundesministerium für Bildung und Forschung (2014)

supported by the German Academic Exchange Service (DAAD). Within its framework, the German BMBF funds two to three months' "Working Internships in Science and Engineering" (WISE) at German research institutes or other institutions of higher education for Indian students of science and engineering who are pursuing a bachelor`s degree. The participants receive a monthly stipend of 650 €, travel support of 525 €, and health insurance. The program aims to inspire Indian students at an early stage of their career to be aware of the opportunities available to them in the German research landscape by pairing them with PhD students in Germany in their research work (DAAD).

4.3 Numbers and fields of study

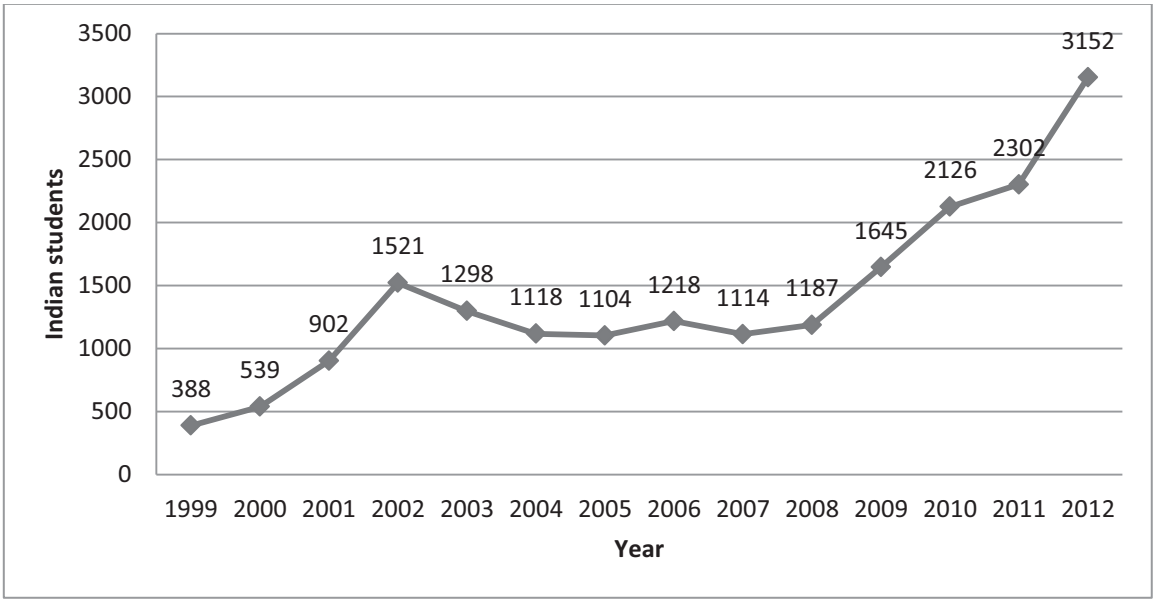
Indians represent a comparatively small proportion of foreign students in Germany; with a share of just 3.5%, i.e. a total number of 7,255 in 2013, they rank only on position 14. However, their numbers show an increasing trend since the late 1990s. While there were only 622 students from India enrolled in Germany`s higher education sector in 1999, their number had increased by almost the 12-fold by 2013 (DAAD 2013). Moreover, with 3,152 newly registered students in 2012, Indians have the highest annual increase of international students in Germany; their number almost tripled over the decade from 2003 to 2012 (see Fig.1) and reached a share of 4 % of the total of 79,537 newly registered foreign students, corresponding to rank 7 (BAMF 2013:63). The share of females reached a peak of 25.3% I 2009, and since them has been permanently declining (Table 3).

Table 3: Indian Students in Germany's tertiary education sector 1999-2012

Year	Indian students	Share of total foreign students (%)	Share of females among Indian students (%)
2002	1.745	1.75	n.a.
2003	2.920	1.79	15.0
2004	3.697	2.05	15.6
2005	3.807	2.0	16.2
2006	3.583	1.9	18.0
2007	3.431	1.8	19.9
2008	3.217	1.8	23.7
2009	3.236	1.8	25.3
2010	3.821	2.1	25.1
2011	4.825	2.6	24.9
2012	5,745	3.0	24.2
2013	7,255	3.5	22.6

Source: Based on data from DAAD and HIS, various years

Fig 1: New enrolments of Indian students in German universities, 1999-2009

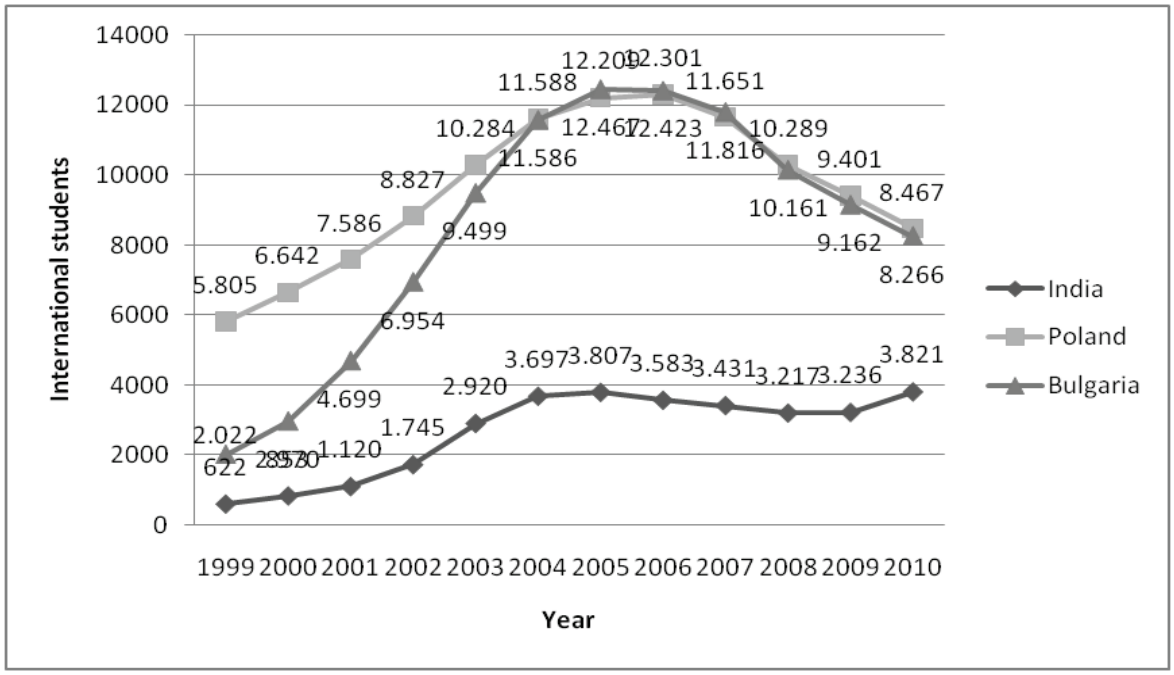


Source: Based on data from BAMF, various issues.

Fig. 2 highlights the position of Indians among international students of the leading source countries in Germany. While until 2005/06 an increasing

number of students were coming from East European countries, and especially Poland, this source group sharply declined afterwards, dampening hopes that human capital gaps could be easily filled from these resources. This shift redirected the focus to students from Third countries.

Fig. 2: Students from India, Poland and Bulgaria in German institutions of higher education, 1999-2010



Source: Based on data from DAAD and HIS (2011)

Table 4 shows the ten most popular subjects of international advanced and master students in Germany in 2012 (i.e. economics, mechanical engineering/process engineering, computer sciences, electrical engineering, music/musicology, law, German studies, civil engineering, engineering, agricultural science/beverage and food technology) and the share of Indian students in the various subjects (Table 5). Most of the Indian students were enrolled in natural sciences and engineering, the majority in master and PhD programs. Their choice of specialization is even more striking when considering the five most popular subjects of international PhD students in Germany. These are biology, chemistry, physics and astronomy, engineering

and human medicine. Indian students ranked in first or second place in all of these areas. In biology they had a share of 31.4%; in chemistry, 24.5%; in physics and astronomy, 16.7%; in engineering, 12.1% (2nd place); and in human medicine, 15.9% (DAAD and DZHW 2013). In 2012, 1,039 Indian students completed their studies in Germany. 33.4% of them obtained a degree in mathematics and science (347 persons) and 42% in engineering (440 persons) (BAMF 2013). These figures clarify that Indian students of a high academic level are mostly engaged in subjects considered essential for the progress of the German economy and which are highly demanded in the German labour market. Despite these numbers, only 195 Indian graduates applied for a residence permit in order to find a job in Germany in 2009; 17.4 % of these were female (BAMF 2011:67).

Table 4: Top ten most popular subjects of international students and the share of Indians in 2012

Rank	Subject	Total	Share of Indians (%)	Rank
1	Economics	4222	7.41	4
2	Mechanical and process engineering	2419	12.69	2
3	Computer Sciences	2000	16.35	2
4	Electrical Engineering	2262	18.3	2
5	Music / Musicology	176	n.a.	>10
6	Law	1012	n.a.	>10
7	German studies	1099	n.a.	>10
8	Civil Engineering	851	7.87	4
9	Engineering	576	18.06	2
10	Agricultural Sciences, Beverage and Food Technology	431	6.26	7
	Total	16,668	86.94	

Source: Based on data from DAAD and DZHW (2013)

In 2011, out of the 7,392 graduates who shifted from student status to professional employment which corresponded to their academic formation

following graduation, just 489 were Indians (in comparison, 1,935 were Chinese)[8].

5. Determinants of Indian students' destination decisions

In the international competition for Indian students, Germany attracts only a minor share of them, and only few of those that come to study in Germany choose to stay in the country after their graduation. Germany`s weak position seems to be essentially due to language problems, immigration rules, the country's Germany's approach to creating a welcoming environment for foreign students (the so-called "welcome culture") and specific policy framework.

Language barrier

As shown above, the vast majority of India's international students prefer English-speaking host countries. Having taken into account the fact that English is a powerful determinant of international students' destination decisions, Germany now offers an increasing number of master programs in English (Varghese 2008:23). According to a survey by the German Chamber of Industry and Commerce (Deutsche Industrie- und Handelskammer, DIHK 2010), 22 of the 47 Foreign Chambers of Commerce regard language as the greatest barrier to a obtaining a higher inflow of highly-qualified migrants to Germany. At the same time, they criticize the restricted possibilities of learning German outside of Germany.

[8] For the year 2012, data is available only until July (incl.) over the period 01/2012 – 07/2012. 317 Indian graduates shifted to adequate employment; altogether this category comprised 4,363 persons. 1,055 of them were Chinese (BAMF 2014).

Immigration rules

The DIHK (2010) study also found that the German immigration rules are considered to be too complicated by many highly-skilled potential immigrants (DIHK 2010). This criticism is particularly indicated by German Chambers in Commerce in non-EU countries. A major problem perceived by the German-Indian Chamber of Commerce is that the granting of work permits is handled differently by various local authorities in Germany. In general, the whole process is considered to be too time consuming, requiring the involvement of many different agencies and persons. Furthermore, for the job search of international students, a one-year residence permit following graduation was considered too short to find a suitable position[9]. It was suggested that this period should be extended to two years and to issue a permanent residence (PR) permit as soon as a graduate has found an appropriate job – policies intended to enhance Germany's attractiveness to Indian students (DIHK 2010). In this context, Baas emphasizes that "the most important reason why they [Indian students] come to Australia is not because they rank Australian universities very highly but much more because they are attracted by the option of applying for PR after graduation" (Baas 2006:11). International students who graduate from Australian universities can often easily obtain a permanent residence permit, because, since 1999, the Australian Department for Immigration and Multicultural Affairs (DIMA) has promoted a so-called "two-step migration", i.e. the "migrants' immediate transition from temporary to permanent residence status" (Hawthorne 2010: 98). After graduation international students can apply for residence status under different categories, for which admission is based on a point-system. Based on this system, international students have the possibility to inform themselves in advance about the conditions they have to fulfil to obtain a permanent

9 After this survey, in 2011, the duration of this residence permit was extended to 1.5 years, according to EU Blue Card regulations.

residence permit after their graduation in Australia. While their application is being processed, candidates are granted a temporary visa allowing them to stay in the country and work with any employer (Suter and Jandl 2006:22). In 2003, 33% of the international graduates obtained a PR visa under one of the Onshore Overseas Student Visa subclasses (Baas 2006:9)[10]. Indians were among the nationalities with the highest permanent residence visa rates; almost three-quarters of graduated Indian students received such a visa in 2003 (Baas 2006:9). Hence, empirical evidence suggests that the possibility to obtain a permanent residence visa is of particular importance for attracting international students of preferred subjects. In addition, Australia has the extra advantage of being an English-speaking country.

Welcome culture in Germany

According to the DIHK survey (2010), German universities do not advertise sufficiently to attract the desired quantity of international students and, as a result, the feeling of "being welcome" to Germany is not strongly felt among potential candidates. Moreover, after their arrival in Germany, international students are largely on their own and receive little assistance by German universities; this contrasts with the support they get in other countries like Australia or the U.S. The DIHK in India emphasizes that Germany should advertise more and support Indian students to a larger extent in organizational issues, such as finding a suitable university, seeking financial support and finding accommodation. German policymakers and universities have reacted to this criticism by implementing several new measures (see section 4 above). Since German universities are not well-known among Indian students, it is important that Germany improves its marketing and sharpens its public profile as a distinguished academic and career location. This should include

[10]International students can also obtain a permanent residence visa through the Employer Nomination Scheme. There are temporary visa categories as well.

an increased participation in international education fairs as well as a stronger promotion of the existing Masters and PhD programs offered in the English language. An important advantage of German universities is the relatively low tuition, an element that also deserves more attention in marketing schemes (DIHK 2010).

Different targets in the German policy landscape

Another reason for Germany's only moderate success in retaining Indian students may be the seemingly contradictory goals of different German ministries. On the one hand, the Federal Ministry for Education and Research and the Federal Ministry for Labour and Social Affairs seek to retain foreign graduates in the country in order to integrate them into the German labour market, a goal which is emphasized by various regulations in the Immigration Act of 2005. On the other hand, the Federal Ministry for Economic Cooperation and Development (BMZ) supports a return program for foreign professionals run by the non-government organization World University Service (WUS), a program designed for international students from Africa, Asia and Latin America (World University Service 2011) and hence, Indian students.

6. Conclusions

This paper has showed that Germany has made various efforts to become a more attractive destination for Indian students. Among other things, more liberal immigration laws have been passed and a number of different measures have been implemented to facilitate the movement of Indian students to Germany. However, despite Germany's success in increasing the number of Indian students in its universities, only a minor share of these

students are choosing to stay in Germany after graduation. A major reason for this is the language barrier. Indian students prefer to study in English and rarely have sufficient competences to do so in German. This becomes evident when considering their most popular foreign destinations - English speaking countries. A lack of perceived social integration further plays a role in the decision of Indian students to leave or stay in Germany after graduation. There is potential to improve the situation at various points; for example, by better facilitating the transition from university to professional employment. The ability to finance this transition until a suitable job can be found is an additional problem for many students.

The economic relations between India and Germany have been intensifying over time. Therefore, a mutual understanding of working style and cultures are of increasing importance for both countries. Attracting and retaining Indian students in Germany is a step in that direction and could simultaneously help alleviate Germany's labour shortages and support its economic relations with India. This, however, is not merely a question of the right policy framework. Further research needs to focus on the role of private companies, since their performance is a decisive factor in retaining Indian graduates via suitable employment. Only through the cooperation of different actors will it be possible to turn Germany into a more popular study and working place for Indian students and graduates.

Chapter 3: Students from China

Human and social capital of Chinese students in Germany

Xi Zhao and Beatrice Knerr

Abstract

Since 2000, Chinese students have been the largest group of foreign students in German universities. However, mainly due to a lack of supporting social networks, they experience a number of difficulties in their studies as well as in their everyday life. This research investigates how Chinese students develop and apply their human capital and social networks in Germany, as well as how their academic performance is influenced by their social capital. Through group discussions and questionnaire-based interviews, we found that the strength of family ties is significantly correlated with students' academic achievements, and that due to cultural differences with the host society, most of them build up narrow social networks only with other Chinese. Our results demonstrate the necessity to increase Chinese students' inclusion in the host society in order to promote their academic success.
Keywords: human capital, social capital, Chinese international students, academic performance

1. Introduction

Coming from a non-German speaking nation with a substantially different cultural background, most Chinese students experience various difficulties in their studies and daily life in Germany. Experience shows that, for example, many drop out of universities because they fail examinations; others become addicted to computer games, or slip into an indulgent life. Some even suffer from depression to an extent that they have to give up their studies. Thus, finding the right answers to the questions how Chinese students in Germany can apply their human capital in the best way, and how they can best develop

new social networks in a foreign environment are essential for enhancing their academic performance as well as their personal well-being. As a contribution to these two inquiries, our study focuses on the questions of how social networks are established in the daily lives of Chinese students in Germany; which relationships exist between social networks and academic performance; and to what extent and why do their personal well-being changes over the duration of their stay in Germany. Through interviews with 50 Chinese students in German universities, we have collected information about the nature, extent and distribution of Chinese students' social network building. The data gained provides deeper insight into their experiences with mobility, transnationality, and the multi-cultural social spaces constructed by these social networks. As there is little research on this topic, our results might be a significant contribution to the knowledge in this field.

By highlighting the relationships between social capital and education, our research is able to offer direction for policies of institutions of higher education for improving the academic conditions as well as the social environment experienced by international students.

The rest of this article is structured as follows. The next section (2) shows the presence of Chinese students in Germany in its global context. Section (3) presents the state of research, based on human and social capital theories, and on the relationship between social capital and education. Section (4) explains the survey design and presents our results by descriptive statistical analysis, which is then discussed. The last section (5) draws conclusions and offers some policy recommendations.

2. Chinese Students in Germany

Following the start of China's economic reforms in 1978, which brought economic and social liberalization and essentially opened the country to international trade and capital flows, the Chinese government launched new policies to encourage young people to study overseas. As a result, over the following thirty years the number of students who went abroad skyrocketed. Between 1978 and 2009, around 1,620,000 Chinese studied abroad, with an average of nearly 52,000 a year (Miao 2010). In 2012, almost 700,000 Chinese studied at foreign institutions of higher education (UNESCO 2014). Since 1996, the Chinese government has abolished previously existing restrictions on self-financed studies abroad and established the China Scholarship Council (CSC), which is responsible for selecting those who will receive a government scholarship for studying overseas. Still the vast majority (93% in 2010) are self-financed (CME 2011). Over the early 21st century China thus became the world's dominant country of origin of international students (CME 2011). Its international students are distributed across more than 100 countries but around 90% concentrate in just 10 countries, namely the USA, UK, Australia, Japan, South Korea, Canada, Singapore, France, Germany, and Russia (OECD 2012). In 2012, about one-third of China's internationally mobile students (altogether 694,365) studied in the United States, followed by Japan (with 96,592) and Australia (with 84,497) (see Table 1). Germany ranked 8th, with 18,323 students.

Table 1: Top-ten host countries of internationally mobile Chinese students*), 2012

Country	Number	% of total
United States	210,452	30.3
Japan	96,592	13.9
Australia	87,497	12.6
United Kingdom	76,913	11.1
Korea, Rep.	43,698	6.3
France	26,479	3.8
Canada	26,238	3.8
Germany	18,323	2.6
(China, Hong Kong)	(17,938)	2.6
(China, Macao)	(13,077)	1.9
Total number of Chinese international students	694,365	88.9

*) Exc. China, Hong Kong, and China, Macao

Source: UNESCO (2014) and own calculations

A significant share of China's internationally mobile students has remained abroad after graduation. The 2011 CME report shows that between 1978 and 2010, about 324,545, i.e. 34%, of the Chinese students who had gone abroad over that period did not return home after their graduation. Although the returnees imply a considerable gain of human capital for China, there is an obvious potential for a greater number of returnees. To attract outstanding Chinese scholars and students to return to China, programs like the 'Changjiang Scholar Program[11]' and the 'Thousand Talents Program'[12] were initiated. In 2010, the number of returnees reached 140,000, an increase of 25% from the previous year. Still, it might also be gainful for China when graduates return later, after having worked in their host country or a third

[11] The Changjiang Scholar Program was launched in 1998 by the Chinese Education Department and the Lijiacheng Foundation. It offers positions as specially-employed professors and lecturers, and issues the Changjiang Scholar Award to attract excellent well-known overseas scholars to China for short-term joint research.

[12] The Thousand Talents Program refers to the Program of Introduction of Overseas Highly Qualified People which was kicked off in 2008. It aims to attract about 2,000 highly qualified scientists and outstanding talents from overseas to work on China's national key scientific innovation projects - in various important disciplines and laboratory projects, in state-owned enterprises and financial institutions, as well as in high-tech development parks – for a period of five to ten years.

country for a period of time. Such work experience gained abroad may become a valuable resource for China's development.

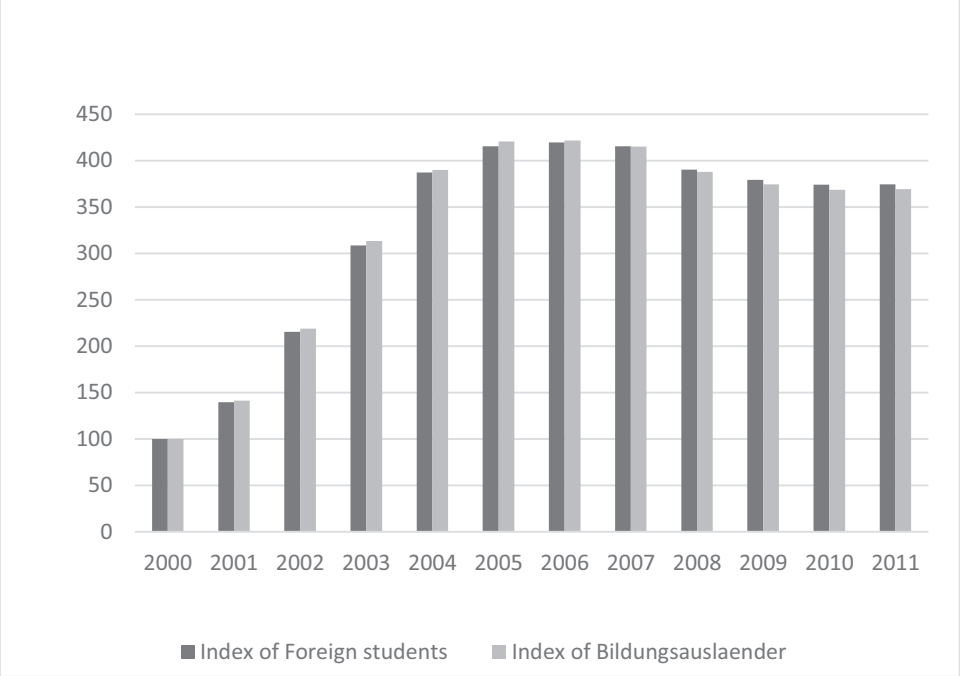
In 2011, the International Education Research Institute of the Education International Cooperation Group (EIC)[13] released a survey-based report about the intentions of Chinese students to study abroad. Interviews with 17,500 students and their parents in 14 major cities in China showed that, when deciding which foreign country they should study in, the most important criteria are the quality of education (emphasized by 28%), the cultural atmosphere (26%), the language (14%), social networks (i.e. relatives or friends in the destination country) (16%), living costs (6%), migration policy (5%), and social status (4%). The U.S. turned out to be the most favoured destination for studying abroad, as emphasized by more than one third of the students, followed by the UK with 17.2%, Australia with 13.8%, and Canada with 11.6%. Just 2.6% of the respondents chose Germany.

Nevertheless, for several reasons an increasing number of Chinese have chosen Germany for their tertiary studies since 2000. Firstly, the expenses for both study and living in Germany are low compared to the major destination countries (such as the UK and the US), the quality of education is high and German universities have a good reputation. Moreover, the security and social stability in Germany provide a favourable living environment. The increasing movement of Chinese students to Germany also corresponds to political priorities. Already in 1987, the Chinese government leader Deng Xiaoping emphasized his intention to diversify the destinations of Chinese students going overseas, aiming to send a larger proportion to Europe and a smaller proportion to the U.S. (Cheng 2002: 162-163). Since the establishment of official diplomatic relations between China and Germany in 1972, many

[13] Education International Cooperation Group is a Chinese company offering services to aid Chinese students who wish to study abroad. The services include consultations for international education, help with applications for study abroad, language training, and educational exhibitions.

bilateral agreements in the fields of economic cooperation, trade, technology, cultural exchange, and academic cooperation have been signed as the relations between both countries have decisively improved. Since the start of China's policy of intensified international opening and free market reforms in 1978, the country's rapid economic growth has offered increasingly favourable formal conditions for Chinese to study in Germany. In 2002, China and Germany signed an agreement of mutual recognition of higher education diplomas, the first agreement of its kind signed by China with a Western country. It has strongly promoted the exchange of students between both countries. Since then, a greater number of Chinese have chosen Germany for their studies in order to obtain an official and internationally-recognized degree. In 2011, according to DAAD, 750 cooperative programs existed between Chinese and German universities (DAAD & HIS 2012). These have facilitated a large number of joint study programs which bring a growing number of Chinese students to Germany. As shown in Table 2, the number of Chinese students at higher education institutions in Germany increased by about four-fold between 2000 and 2011.

Fig. 1: Chinese graduates of higher education in Germany (2000-2011)



Source: Based on data from DAAD & HIS (var. years)

Table 2: Chinese students in Germany according to their degree

	Diploma and other degrees		Doctor-ates	FH* degrees	Master		Bachelor	
	Univer-sities	Univer-sities of applied sciences	Univer-sities	Univer-sities of applied sciences	Univer-sities	Univer-sities of applied sciences	Univer-sities	Univer-sities of applied sciences
2000	3,738	5	788	611	139	66	24	39
2001	5,131	4	821	836	453	240	113	73
2002	7,602	5	850	1,556	840	430	255	155
2003	11,866	9	995	2,429	1,164	563	509	239
2004	14,645	11	1,072	3,472	1,601	618	857	318
2005	15,320	12	1,213	3,952	1,971	656	1,069	467
2006	14,729	10	1,275	3,731	2,311	702	1,284	755
2007	13,282	11	1,452	3,134	2,835	693	1,561	1,219
2008	10,791	8	1,730	2,306	3,198	782	1,918	1,691
2009	8,612	6	2,015	1,531	3,759	913	2,400	2,111
2010	6,538	5	2,496	970	4,462	1,000	2,938	2,556
2011	4,762	1	2,944	486	5,423	1,155	3,362	2,881

*FH = Fachhochschule (University of Applied Science)
Source: Based on data from DAAD & HIS (2014)

3. Conceptual framework

3.1 Social capital

Scholars of social capital theories emphasize different aspects of this concept. Granovetter, one of the early proponents of social capital, pointed out that "a sophisticated account of economic action must consider its embeddedness in on-going structures of social relations" (Granovetter 1985). Hence, he paid much attention to the relationship between social capital and social structures established by economic action. At about the same time, Bourdieu emphasized that there are three basic forms of capital - economic, cultural and social capital[14], which together "account for the structure and functioning of the social world" (Bourdieu 1986). He identified social capital formed by participation in social networks or groups as an important factor for achieving individual progress. Coleman emphasized its importance for human capital formation in the family as well as in the community, both of which demonstrate considerable value in reducing an individual's likelihood of dropping out of high school (Coleman 1988). These early scholars, however, did not clearly separate social capital from economic, human and cultural capital, but viewed them as complementary.

From the 1990s onwards, scholars increasingly focused on the concept of social capital, based on the definition that social capital refers to "…features of social organization, such as trust, norms, and networks, which can improve the efficiency of society by facilitating coordinated actions" (Putnam, Leonardi and Nanetti 1993). According to Putnam (1995), social capital is embodied in "norms and networks of civic engagement," which seem to be preconditions for economic development and effective governance. Narayan (1997) further pointed out that social capital encompasses "the rules, norms, obligations, reciprocity and trust embedded in social relations, social

[14] At that time, Bourdieu did not focus on human capital.

structures and society's institutional arrangements which enable members to achieve their individual and community objectives" (Narayan 1997). The World Bank considers social capital to be "the institutions, relationships, and norms that shape the quality and quantity of a society's social interactions" (World Bank 2000). With these various definitions in mind, our study chooses to view social capital as a socially accessible resource and a critical factor for achieving individual progress through participation in social networks or groups.

3.2 Social networks

An individual's social identity is defined by the collectivities to which he/she belongs (Simmel in Wasserman & Faust, 1994:342). Three dimensions of social capital are usually distinguished, based on the strengths of social ties (see NESF 2003; OECD 2001; Aldridge et al. 2002):

Bonding social capital refers to the close socially-homogeneous ties between family members, neighbours and close friends. Our research focuses on bonding ties, i.e. the support from or interaction with family and close friends.

Bridging social capital refers to the weaker socially-heterogeneous ties connecting people in horizontal associations. These cut across social groups and can be effective in providing access to a broader spectrum of resources and supporting upward mobility (Putnam 1993). Bridging social capital is associated with participation in voluntary associations and club activities.

Linking social capital refers to relationships between people and groups via vertical ties or hierarchical power relations. In our research, it is measured by employment or work relationships.

The differentiation of bonding, bridging and linking social capital has contributed to a better understanding of the concept of social capital as a whole. Since social capital is shaped by both the conditions that prevail in a

certain place as well as the characteristics of the people living there (Eileen 2006), the various social networks of Chinese students in Germany can thus be illustrated by the framework depicted in Fig. 2. It shows the different personal attributes influencing their academic performance abroad, like age, gender, educational background and life experiences. In order to integrate into a host society, foreign students apply their given and newly accumulated human and social capital within the specific education policy framework in the process of internationalization. Their social capital in terms of bonding, bridging and linking social networks are reconstructed over time, which might also lead to changes in their values and attitudes towards people and institutions, as well as their future plans. This process results in different levels of social inclusion. Within this conceptual framework we explore the outcome of the students' relations with their host society; examine the cultural distance prevailing in the renewal of social networks; consider the factors which are important for their academic performance; and analyse the changes which are taking place.

Fig. 2: Framework of social networks

Context	Social capital	Outcomes
A. Individual characteristics and academic performance • Age • Gender • Education • Education level • Life experiences B. Internationalization: • Human capital • Social capital C. Education policy	A. Social networks • Bonding: family, friends • Bridging: club activities • Linking: Employment B. Values • People • Institutions	A. Inclusion-exclusion • Relations with the host society B. Cultural distance and social networks C. Social capital and academic performance D. Changes

Source: Authors' concept

4. State of Research

4.1 Human Capital and Education

Human capital is generally described as the knowledge and skills an individual possesses. It is mainly determined by education, training and experiences. The OECD defines human capital as "the knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being" (OECD 2001).

Many researchers have explored the role of human capital in social and individual development, focusing mainly on the relationship between human capital and individual study performance, employment, and income. For example, a joint research conducted by the Swedish and German Ministries of Finance and the British HMT[15] in 2008 demonstrated that human capital is an essential determinant of an individual's earning capacity and employment prospects as well as of one's productivity, wages, and other economic and social outcomes - and hence also a determinant of the level and distribution of income in a society (Bloendal et al. 2001). Generally, human capacity also enhances social mobility and social inclusion by strengthening a person's capacity to integrate in society. Therefore, investment in human capital concerns not only individual development, but also the welfare of the whole society.

Human capital can be created by skill and knowledge upgrading of a person's capabilities which helps to put them in a position to act in new ways. In this context, mobility is considered as an important determinant of human capital while at the same time, mobility opportunities increase with the level of human capital (Eve Parts 2003). Individuals with higher education levels can

[15] HM Treasury (Her Majesty's Treasury) is the United Kingdom's government department responsible for developing and executing the British government's public finance and economic policy.

cross international borders more easily than those with lower education as they are more welcome on the labour market of other countries and also are better prepared to migrate. Mobility is an asset as well as a chance for further developing one's own human capital, and education is a productive investment which enhances one's ability to study abroad to further accelerate the accumulation of additional human capital.

4.2 Social Capital and Education

Social capital theory is useful to explain differences in students' performance. Based on this concept, James Coleman, in the 1980s, analysed ethnic disparities in students' achievements. He argued that social capital in the form of parental expectations, commitments, and social networks existing within the family, the school, and the community are essential for their academic performance. Numerous researchers afterwards examined how social capital influences education, especially the academic formation in trans-national mobility. For example, Putnam (2000) argued that "child development is powerfully shaped by social capital" and that "the presence of social capital has been linked to various positive outcomes, particularly in education" (Putnam 2000:296). He showed that these outcomes primarily result from parents' social capital in a community, and that the children's level of education increases with this form of social capital (Putnam 2000: 300). Zhou (1995) examined how the process of societal adaptation of young Chinese Americans was affected by social relations between the community, immigrant families, and younger generations. She found that ethnic-specific support enhances students' academic success, and that maintaining literacy in the native language constitutes a form of social capital that contributes positively to academic achievement. Maljoribanks and Kwok (1998) analysed the differences in educational achievements between female and male

adolescents using the concept of social capital as their main analytical tool. Their survey in secondary schools in Hong Kong revealed that the effects of social capital are gender specific. Another survey on the social capital of international students, carried out by F. Neri and S. Ville (2006) in Australia, revealed a high degree of variability of social capital formation between students and a close relationship between social capital, education and trans-national student mobility.

Some studies, however, have also identified a potentially negative impact of social capital; they report that high levels and/or inappropriate use of it could hamper individual and social development (see Paxton 2002; Woolcock & Narayan 2000). Challenging Coleman's results, Morgan and Sorensen (1999) found that, although social capital could contribute to maintaining a comprehensive functional community in norm-enforcing (in this case, Catholic) schools, it can also provoke negative consequences due to excessive monitoring. The effects of social capital hence are context-dependent: "one kind of social capital may be positive in this setting but is not necessarily still positive in another setting" (Morgan and Sorensen 1999). By studying the spatial dynamics of collective efficacy for children, Sampson et al. found that "resources or networks (e.g. voluntary associations or friendship ties) as such are neutral - they may or may not be effective mechanisms for achieving intended effects" (Sampson et al. 1999). In this sense, the outcomes of social capital for education in different ethnic and cultural contexts of international student mobility are to be examined with care.

5. Methodology

To explore the research questions based on primary data, we organized a group discussion and a series of semi-structured interviews. The data was analysed using descriptive statistics.

Focus group discussion

In the first stage of our field research we conducted a semi-structured focus group meeting with six Chinese students from the University of Göttingen. It was undertaken in Mahatma-Gandhi-Haus, a residential accommodation for international students where many Chinese are living. We discussed the concept of social capital and identified bonding, bridging and linking elements of social networks of Chinese students. Two of the participants had studied the German language at a pre-bachelor level in a language school. The students represented four different subjects at the university - agricultural sciences, law, electronic engineering, and economics. They helped us to formulate the questionnaires and to distribute them to other Chinese students in Germany.

Survey among Chinese students

In the second stage of our study, a survey was conducted with a questionnaire that consisted of three closely related parts: the first covered the respondents' personal characteristics; the second measured their social capital; and the last part examined the changes in their language proficiency and in their personal well-being since their arrival in Germany. Through convenience (non-probability) sampling, we distributed the questionnaires among 20 Chinese students in Göttingen and sent 35 to students at Bielefeld University and TU Dresden by email and MSN (The Microsoft Network). Altogether, 50 valid questionnaires were recovered.

Limitations

Our empirical work is not without some limitations; in particular, resource constraints prevented us from creating a more representative survey. The

sample size was relatively small with just 50 persons, and the questionnaire was distributed among only three German universities (Goettingen University, Bielefeld University and TU Dresden), though a total of 108 Chinese students were studying at these universities in 2013.

6. Results of the survey

6.1 Students' personal characteristics and academic performance

Table 3 shows basic personal characteristics of the respondents. 62% of them were females, 50% were 20 to 25 years old, and 12% were married - all of them with a Chinese partner; one couple had a child. Before traveling to Germany, 30% had lived in Beijing; the others in Shanghai, Nanjing, Wuhan, Shandong and other big cities of China. In Germany, most were staying in student dormitories (64%) and the rest in rented private accommodations, except for one person who was living with a local family. 58% of the respondents had studied in Germany for one to three years, and 20% had arrived within the previous year. 62% study their subject in the German language, 28% in English, and 10% in both German and English.

42% declared that they had chosen Germany for their studies because of the high quality of German universities. For 18% the low living costs were more important, and 14% came because they had friends in Germany. Most respondents (66%) were studying in Germany with the financial support of their family, 18% were depending on paid jobs, and 16% were on scholarships or grants from either the German or Chinese government or from foundations.

Table 2: Characteristics of respondents (n=50)

Attribute		Number	Percent
Gender	Male	19	38
	Female	31	62
Age	Under 20	1	2
	20~25 years old	25	50
	26~30 years old	18	36
	31~35 years old	6	12
	Over 35	0	0
Marital status	Single	44	88
	Married	6	12
Length of stay in Germany	Less than 1 year	10	20
	1~3 years	29	58
	4~6 years	8	16
	7~9 years	2	4
	Over 9 years	1	2
Accommodation	Univ. dormitory	32	64
	Private house	17	34
	With local family	1	2
Study language	English	14	28
	German	31	62
	Both	5	10
Main financial source for study	Family support	33	66
	Employment	9	18
	Scholarship/Grant	8	16
Educational level achieved before going to Germany	High school graduate	6	12
	College graduate	12	24
	Bachelor	27	54
	Master	5	10
	PhD	0	0
Degree studying in Germany	Language	6	12
	Bachelor	9	24
	Master	28	54
	Doctor	7	10
Academic performance in Germany	Excellent	1	2
	Good	27	54
	Average	20	40
	Below average	2	4

Source: Authors' survey

For Chinese students, studying in Germany is a process of accumulating human capital which builds on the human capital they acquired before through their educational background. Half of the respondents (54%) arrived with a bachelor degree, 10% with a master degree, 24% had just finished college, and 12% had graduated from high school.

Table 3 is a matrix showing the educational level attained in China according to the level being studied in Germany. As expected, most high school graduates come to Germany for a BSc, followed by language studies; meanwhile the majority of BSc graduates continue with their MSc studies in Germany. Some visit language schools for receiving a language certificate. All the master graduates continue for a PhD degree in Germany.

Table 3: Matrix showing aspired study degree in Germany and educational background in China

	Educational level (graduation) before going to Germany (%)					
Aspired degree in Germany	High school	College	University	Master	PhD	Total
Language course	1	2	3	0	0	6
Bachelor	3	5	1	0	0	9
Master	2	4	21	0	0	28
PhD	0	0	2	5	0	7
Total	6	12	27	5		50

Source: Authors' survey

Most of our respondents studied management & economics (26%), followed by engineering (22%) and natural sciences (16%) (Table 4). Our results are similar to those of Kaiyuan's survey conducted in 2006 among 600 Chinese students in Germany which found that most studied "engineering" (electronic,

information, chemistry) and "management and economics" (Kaiyuan Forum 2006).

Before moving to Germany, most of the respondents majored in engineering (22%) and management & economics (22%); 18% studied languages and education, 16% natural sciences, 14% social sciences, and the rest studied arts or visited some pre-university course (Table 4).

Table 4: Previous and current study subjects of Chinese students (N=50)

	In China		**In Germany**	
Subject	Number	Percentage	Number	Percentage
Engineering	11	22	11	22
Management & Economics	11	22	13	26
Language & Education	9	18	6	12
Natural Sciences	8	16	8	16
Social Sciences	7	14	6	12
Art	2	4	1	2
German (pre-university)	2	4	5	10

Source: Authors' survey, 2010

Those who had changed from their previous studies in language or social sciences mainly shifted to management and economics, as they felt that the subject would provide for better employment opportunities after graduation. The most common study problem for Chinese students is difficulty with the German language. Some of those who intended to study a subject offered in the German language were required to first pass a language examination, and therefore started their studies in Germany with a time-consuming language course.

In their academic performance, 54% of the respondents have attained a "good" score, 45% were at an "average" level, a few were "below average",

and only 2% reached an “excellent” outcome (Table 2). To find out which personal factors are related to their academic performance, we looked at their gender, marital status, study language, and educational background via cross-tabulation; however, we could not find any significant differences between the study-outcome groups based on these factors.

6.2 Social Capital of Chinese Students in Germany

Bonding social capital: family and friends

To get an overview of the respondents’ bonding social capital we considered the frequencies with which they contact family members and their associations with friends. Almost half of them (24 persons) stated that their main contacts were from their “current place of residence with students from a different country of origin than [their] own”; 21 were rather friends with “students from [their] own country of origin”; and the rest with “non-students”. This result is not surprising because most of the Chinese students are living in student dormitories or in private housing, which are highly international environments.

40% of the respondents said that they have 10 to 20 friends, 32% have less than 10 friends, and 24% have more than 20 friends; 4% declared to have “no friend” (Table 5). Most of them admitted that the majority of their friends are Chinese, a trend that seemed to be independent of the length of time they had been in Germany. More than half answered that they socialize from one to ten hours per week, while most of the rest spend between 10 and 30 hours per week with friends, and only a minor share spend between 30 and 60 hours. Here we may find a hint as to why all the married respondents had Chinese partners.

Table 5: Friendships of Chinese students in Germany

Friend ties	Choice	Number	Percentage	Total
Number of friends[16]	No friend	2	4	50
	< 10	16	32	
	10 to 20	20	40	
	> 20	12	24	
Origin of friends	Chinese	41	82	50
	Non-Chinese	9	18	

Source: Authors' survey

Most of the respondents had no family members living in Germany, but 14% are in contact with their family in China nearly every day; almost 50% are in contact twice or thrice per week, and just 28% more seldom.

Cross-tabulation analysis demonstrates that the intensity of family contact is closely related to the students' academic performance. Those with the most frequent family contact show excellent or at least above average academic results, while those who have less family contact tend to perform below average (see Table 6). As mentioned above, most Chinese who study in Germany do so with the financial support of their family, indicating that family ties are a promoting factor in students' transnational mobility. Our experience shows that not only the financial support but also the emotional support from the family in China is essential for students' academic success. An alternative explanation of this relationship would be that those who are less proficient in their studies might avoid frequent contact with their families.

[16] The definition of "friends" in this research refers to persons who spend their spare time together and help each other.

Table 6: Relationship between academic performance and family contact

	Frequency of weekly contact with family in China (%)				
Academic performance	almost every day	> 3 times per week	twice or thrice per week	only a week or less	total
Excellent	1	0	0	0	1
Good	3	2	15	7	27
Average	2	1	11	6	20
Below average	0	0	0	2	2
Failed	0	0	0	0	
Total	6	3	26	15	N=50

Source: Authors' survey

Bridging social capital: club activity

Bridging social capital is demonstrated by Chinese students' involvement in university-based and non-university-based activities (e.g. faculty, sport, religious or socio-political). The overwhelming majority of the respondents (86%) have not joined any club or association in Germany. The few who did (seven persons, i.e. 14%) mainly participated in sports clubs, followed by nationality and faculty clubs. Very few showed interest in political or religious activities. Most spent less than ten hours per week for club activities.

Linking social capital

Linking social capital consists of the students' relationships and contact frequency with university instructors and the amount and kind of any paid work they regularly perform while studying. We found that most of the respondents did not work for money but instead concentrated on their studies. 42% had paid jobs and one person did voluntary non-paid work. Linking these finding with the students' academic performance revealed that paid work had some negative implications for study achievements (Table 7).

Table 7: Relationship between academic performance and work during the study

	Kind of work during studies (%)			
Academic performance	No work	No paid work	Paid work	Total
Excellent	1	0	0	1
Good	13	1	13	27
Average	14	0	6	20
Below average	0	0	2	2
Total	28	1	21	50

Source: Authors' survey

Most of the students doing paid work were employed in restaurants, retail stores, or as manual labourers – none of which contributed to their academic progress. Some had obtained clerical jobs in educational institutions or companies. 32% were motivated by the wish to "gain some income", and a few intended to build up their personal networks through paid work.

44% of the respondents stated that they are "sometimes" in contact with university instructors, while 24% were "seldom" in contact, 14% were "often" in contact and the rest were "never" in contact. The cross-tabulation analysis did not reveal any links between contact with instructors and level of academic success.

6.3 Language progress

Universities offer an excellent environment for practicing the German language, especially for those students who are attending their courses in German which provides them ample a lot of opportunities to communicate with native German speakers. Table 8 shows that in general, the respondents' German language competences significantly improved since their arrival in Germany. While 66% had come to Germany with weak German language

skills, this share had dropped to 24% at the time of this survey. The percentage of those with good competence in German had increased by more than threefold, from 10 to 36%, and those with "perfect" competence from 0 to 8%.

Table 8: Change in German language skills (n=50)

Language level	Before coming to Germany		At the time of the survey	
	number	%	number	%
Weak	33	66	4	8
Average	12	24	16	32
Good	5	10	18	36
Perfect	0	0	4	8

Source: Authors' survey

However, while German language competences improved considerably, most Chinese students' proficiency in English decreased to some extent. Table 9 shows that most of the respondents considered their English skills to have declined; the percentage having "weak" skills increased from 12% to 16%, while the share having "good" or "perfect" skills had dropped from 62% to 52%. A major reason for this development is that, since German is the commonly used language in their host country, there are more chances for practicing this foreign language in everyday life, at the expense of English skills. In addition, as shown previously, Chinese students prefer to spend their spare time with other Chinese. They study together, enjoy leisure activities together and dine together; and during these activities, they communicate in Chinese Mandarin. Under these circumstances, there are few opportunities to make progress in English, except for those who study in an English program.

Table 9: Perceived changes in English language skills (n=50)

Language level	Before coming to Germany		At the time of the survey	
	number	%	number	%
Weak	6	12	8	16
Average	13	26	16	32
Good	25	50	22	44
Perfect	6	12	4	8

Source: Authors' survey

6.4 Changes in the level of happiness

Our findings concerning the respondents' current level of happiness compared to their level of happiness upon arrival in Germany - reveal significant changes in the subjective well-being of Chinese students. For 28% of the respondents their happiness level had increased, for 32% it had not changed, and for 40% it had declined (Table 10).

Table 10: Perceived changes in the level of happiness

	Initial happiness level when coming to Germany					
Current happiness level	Very high	High	Moderate	Low	Very low	Total
Very high	1	1	1	0	0	3
High	0	4	5	2	0	11
Moderate	0	4	10	9	1	24
Low	0	1	5	1	2	9
Very low	0	1	1	1	0	3
Total	1	11	22	13	3	50

Source: Authors' survey

6.5 Plans to return or stay in Germany

Comparing the students' former and current plans for either returning to China or staying in Germany after graduation, we found that most stick to their initial plans. Three of those who had not previously decided chose to return to China while two of them opted for Germany. The percentage of those planning to return to China increased slightly from 20% to 23%, while the share of those who wanted to stay in Germany declined by the same percentage.

Table 11: Relationship between current and former plans regarding staying in or leaving Germany post-graduation

	Plans made before coming to Germany (%)			
Present plan	Return to China	Stay in Germany	Not sure	Total
Return to China	15	5	3	23
Stay in Germany	1	5	2	8
Not sure	4	1	14	19
Total	20	11	19	50

Source: Authors' survey

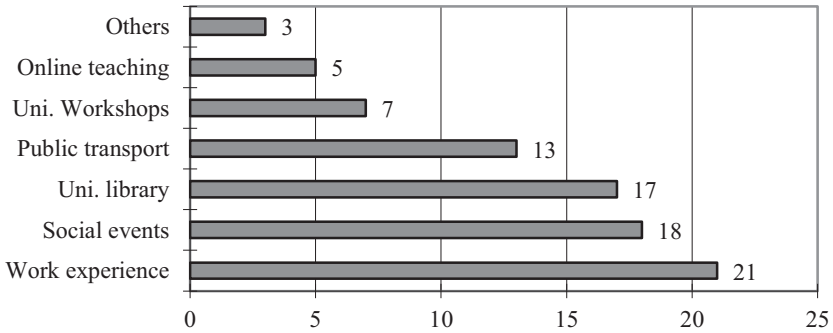
6.6 Aspects to be addressed for improvement

Considering the fact that on average there seems to be a decline in students' level of happiness over the duration of their stay in Germany, it is understandable that more students want to return to China after graduation than had planned to do so upon their arrival. Through in-depth interviews with those who had perceived a decline in their happiness, we found that the main reason was that they felt excluded from mainstream German society. In addition, when coming to Germany, Chinese students faced language problems in both everyday life and in their studies, and because of cultural differences most kept their original lifestyle in terms of cooking, product consumption, and how they spent their leisure time. Over the course of time,

they developed the feeling that Germany's social norms and regulations and its public culture were difficult to understand and that they had to learn much in the public sphere. This cultural distance impels most Chinese students to live within a narrow social space with their fellow countrymen. It provides an additional explanation for the fact that most Chinese students prefer to make friends with or get married to other Chinese. In this way, in many cases, a kind of "vicious circle" composed of a lack of understanding, deficiencies in integration and isolation develops. Since social and human capital reinforces each other's effects, individual achievement tends to be higher when students communicate with others through different networks and common value systems (Eve Parts 2003).

When asked what aspect is most important for the improvement of their living and academic status in Germany, most respondents emphasized work experience, followed by social events, quality of the university library and access to public transport (see Fig. 3). This means that Chinese students in Germany primarily wish to enhance their human as well as their social capital. At the same time, public services, including university-based and community-based services, are viewed as essential to the improvement of their private lives and their studies organization.

Fig. 3: Most important issues for improving life and study environment in Germany



Source: Authors' survey

6.7 Discussion

Complementing previous surveys of Chinese students in Germany (see e.g. Kaiyuan's 2006 survey) our research has furthered the knowledge base by incorporating a theoretical framework and conceptual structure. While, for example, the Kaiyuan survey collected basic information, our research - founded on social capital theory - sought to measure Chinese students' different kinds of social capital in order to provide new insights into their social space and academic performance.

Later on, as a follow-up, the authors, together with Liting Ma, conducted another survey among Chinese students in Germany, the focus of which was more concerned with the relationship between individual development and social capital (see Knerr, Ma, and Zhao 2014 in this volume). In that survey, we found that social capital is influenced in different ways by gender and individual development - which further demonstrates the importance of social capital for individual development in the process of transnational mobility.

7. Conclusion

Our survey demonstrates that family support in bonding networks has significantly positive effects on Chinese students' academic performance in Germany - not only because of the financial aspect, but also because of the emotional aspect. Ties to friends, in contrast, do not seem to be associated with the quality of academic performance, nor are club activities (bridging social capital).

Engaging in paid employment and thus establishing employment relations (linking social capital) have negative effects on academic success. Most Chinese students work low-skill jobs in restaurants, in the retail sector or as manual labourers in factories. They seek only to earn some money and generally do not learn skills that are professionally or academically useful;

nor do they build up helpful social networks, as confirmed by the in-depth interviews. However, finding suitable work in Germany - either during their studies or after graduation – is a challenge. In addition, cultural differences are prominent in everyday life, and lead to the exclusion of most Chinese students from mainstream German society, thus restricting them to the narrow social networks they maintain with other Chinese. This might explain why - when it comes to social relations - only family ties contribute to their academic success, whereas ties with friends, clubs or academic instructors do not.

The fact that most Chinese students significantly improved their German language skills at the expense of their English skills might not be a favourable outcome for Chinese students; this is because when they seek employment in China, English skills will generally be more advantageous than German skills.

Students' perception of their own happiness was used as the main an indicator of well-being. Many Chinese students experienced a decline in their level of happiness while staying in Germany, mainly due to a lack of more inclusive social networks. This helps us understand why most Chinese students are so concerned about finding work experience and organizing social events to improve their life and studies in Germany. This suggests that their well-being would be substantially enhanced if universities and communities would make adjustments to some services like, for example, the teaching system, public transport or the university library. Targeted modifications in these areas have the potential to help them in their studies and to strengthen their inclusion in the host society.

The fact that over the course of their studies, many Chinese change their mind with regard to staying in Germany after graduation - indicates that their overall experience may not be entirely positive. The problem is not only the lack of social networks at the individual level but also the feeling that the host

society is not sufficiently inclusive of international students. This seems to be the case despite the fact that German universities have made great strides since the mid-2000s (due to the Bologna process) in speeding up the pace of internationalization and increasing their efforts to attract talent from abroad.

Based on our results, we propose the following measures that German authorities should take in order to improve the study and living conditions of international (namely Chinese) students in Germany. First, specific (individual or group) tutoring programs should be developed that offer targeted guidance for students' academic and social life. Second, more language courses - explicitly combined with information on German culture and intercultural communication - should be offered to international students; it would be additionally helpful if these courses were developed to be nationality-specific.

Chapter 4: Students from Nepal

Nepalese students' human capital accumulation in Germany

Ranjita Nepal and Beatrice Knerr

Abstract

This paper presents a personal and educational profile of Nepalese students in Germany and their plans for movement after graduation. The primary data for the study was collected using a structured questionnaire distributed among Nepalese students enrolled in higher education institutions in Germany. The main reasons cited for coming to Germany were the good study conditions and the opportunity to gain research experience. Most of them came self-financed and did some part-time work to meet their living costs. Only a minor share of the respondents intend to stay in Germany after graduation, although this share tends to increase over the study period.

1. Introduction

Nepal, landlocked between India and China, is one of the poorest countries in the world with a population of around 28.8 million, a per capita GNI[17] of US$ 400 (World Bank 2010) and a per capita GDP[18] in PPP[19] terms of 1,200 US$ - corresponding to rank 205 out of 228 countries (CIA 2012). The Human Development Index (HDI) for 2013 was 0.4263[20], i.e. on rank 157 out of 186 measured countries (UNDP 2014a and 2014b).

Nepal's history of higher education began with the establishment of Tri-Chandra College in 1919. Access to higher education was given to all who

[17] Gross National Income
[18] Gross Domestic Product
[19] Purchasing Power Parities
[20] Calculated by the method of using a geometric mean introduced in 2010 to substitute the method of using an arithmetic mean (UNDP 2014a)

had acquired high school level, but only a limited range of study fields were offered at the bachelor level. Hence, those with other interests and ambitions and sufficient funding used to move abroad for higher education, largely to India. After the establishment of Tribhuvan University (TU) in Nepal in 1959, the flow of students to other countries declined because the institution offered previously unavailable master level studies and higher education in science and technology. Although in 2014 meanwhile there are six universities in Nepal[21], TU is still considered the country's most important centre of higher education. Nevertheless, the number of Nepalese studying overseas has strongly increased since the 1990s. Political instability and frequent strikes are considered the major reasons for this development. Moreover, students are attracted to foreign studies by a number of factors, including quality of education; opportunities for employment or further studies after graduation; high incomes; and quality of life (NIDS 2008). International degrees are highly recognized by Nepali employers, and Nepalese degree holders who studied at distinguished foreign universities have been successful on the international job market. For Nepalese students, English-speaking countries, like the USA and Australia are the top destinations. Still, a significant number of Nepalese students are enrolled in German institutions of higher education.

This paper presents a basic profile of Nepalese students in Germany, including their regions of origin, fields of study, awarded degrees, work experiences prior to their coming to Germany, sources of funding for their studies, and return plans. Our results are based on a survey of 55 students enrolled in different institutions of higher education in Germany, i.e. around 10% of the Nepalese students in the country. To our knowledge no such study has been done before.

[21] These are Tribhuvan University, Nepal Sanskrit University, Kathmandu University, Purbanchal University, Pokhara University and Lumbini Budha University.

2. Nepalese students in Germany

Studying abroad is often a pathway to permanent emigration. Nepalese students tend to choose economically advanced countries for their high-quality education and often seek to stay there permanently. The US is generally their preferred place of study. In 2012, 9,319 students from Nepal were enrolled in the US (see Table 1), almost ten times more than in 1995 (IIE 2014), making Nepalese the 11th most common nationality among foreign students in the US. Their most popular fields of studies in 2011/12 were business and management (21%), followed by physics and life sciences (19.2%), engineering (17.8%) and mathematics and computer sciences (11.6%). Most of them were enrolled at the undergraduate level. According to UNESCO statistics, the second most important destination for Nepalese international students was Australia (with 6,380 students), followed by India, Japan and the UK. Germany ranked 7th with 501 students.

Compared to other host countries, the number of Nepalese students in Germany is quite small, although it shows an increasing trend - from 319 in 2006 to 954 in 2013 (Table 2). Nepalese students are attracted to Germany by favourable study and income opportunities. It is possible for students to work for some hours per week and thus earn enough to cover their living expenses.

Table 1: Top ten destination countries of internationally mobile Nepalese students, 2012

Host country	No. of students	Share of total (%)
United States	9,319	31.9
Australia	6,380	21.9
India	5,481	18.8
Japan	2,035	7.0
United Kingdom	1,613	5.5
Finland	946	3.2
Germany	501	1.7
Cyprus	344	1.2
Thailand	332	1.1
Denmark	324	1.1
Total number of international Nepalese students	29,184	93.5

Source: Based on data from UNESCO 2014

Table 2: Nepalese students in Germany 2006-2013*)

Year	2006	2007	2008	2009	2010	2011	2012	2013
Number of students	319	367	411	478	547	644	761	954

*) This data is not entirely consistent with that of UNESCO due to different institutional definitions and reporting gaps.
Source: DAAD 2014

3. Methodology and database

Our empirical analysis is based on an online survey by means of a semi-structured questionnaire, which was distributed via email and also via a link on the websites of the Nepalese Student Association (NSA) and the Nepalese People Association (NPA) in Germany from April to June 2010. It was disseminated among persons staying in Germany with a student visa. Suitable participants were identified by snowball sampling through Nepalese students in different universities of Germany and through the aforementioned Nepalese Associations. Due to the given budget and time constraints, an online survey was the preferred option for implementing this study. A general challenge in

using this kind of surveying is reaching an appropriate sample population. In our research, this was overcome by asking a Nepali association to place a link to the questionnaire on their websites. A specific command was used to prevent the same respondent from filling out duplicate surveys.

The questionnaire contained mostly close-ended questions and addressed topics in the following areas: personal characteristics, professional experiences in Nepal, field of study and degree in Germany, funding of studies, employment during studies, educational motivations and other factors influencing educational migration, level of academic success, and return plans. The analysis was split into two sections: one focusing on one's professional life before coming to Germany and the other on student life in Germany. The data was analysed with descriptive statistics using the statistical tool SPSS 14. Altogether 59 responses were collected. Since four of them provided incomplete information, 55 questionnaires were used for the analysis - corresponding to around 10% of the Nepalese student population in Germany in 2010.

4. Results and Discussion

Regions of origin in Nepal. Nepal is divided into five development regions: Eastern, Central, Western, Mid-Western and Far-Western. The capital, Kathmandu, belongs to the Central region which is home to nearly 35% of the country's population. The Central, Western and Eastern regions are more developed in terms of human development, poverty and gender development indices than the Mid-Western and Far-Western regions (Table 3).

Table 3: Population and UNDP Development Indicators of Nepal by region

Development Region	Human Development Index	Human Poverty Index	Gender Development Index	Population size
Eastern	0.52	33.7	0.51	5,344,476
Central	0.53	35.3	0.51	8,031,629
Western	0.51	33.2	0.51	4,571,013
Mid-Western	0.45	38.7	0.41	3,012,975
Far-Western	0.46	39.0	0.44	2,191,330
Overall for Nepal	0.50	35.4	0.48	23,151,423

Source: UNDP, 2014

44% of our respondents came from the Central Region (Table 4), where inhabitants generally have better access to information and are more aware of the internationalization of higher education than those from other areas. Those originating from the Mid-Western and Far-Western regions account for a share in the students' population which is far below their home regions' share in the total population (1.8% and 3.6%, resp., as compared to 13% and 9.5%, resp.). This is understandable since the generally lower educational level in these more remote regions and the lack of access to information tend to prevent student mobility. These results suggest that migrants come from better-off sections of the population. Migration to foreign countries requires resources in the forms of time, money, and information – all of which are necessary to gain access to the required visa, travel tickets, accommodation abroad and other facilities – thereby rendering emigration unaffordable to the poorest in society.

Table 4: Nepalese students according to region of origin and gender

Region	N	% of respondent	Female/male ratio	Region's share of total population*)
Eastern	7	12.7	0.17	23.1
Central	24	43.6	0.60	34.7
Western	21	38.2	0.24	19.7
Mid-western	1	1.8	0.00	13.0
Far-western	2	3.6	1.00	9.5
Total	55	100	0.38	100

Source: Authors' survey; *)CBS, 2001

73% of our respondents were men (Table 4), reflecting the overall gender bias of the foreign Nepalese student population for which the number of males significantly exceeds that of females. This is mainly due to the predominance of a patriarchal society in Nepal. The cultural and social norm that holds that women should not leave the house unless accompanied by a man further hampers their educational mobility.

Age structure. All of our respondents were younger than 40 years. Almost 40% of them were between 26 and 30, followed by the group of those between 20 and 25 (Table 5). Most of those enrolled in PhD programs fell in the 31 to 35 years age group.

Table 5: Nepalese students by age and degree program

Age group	Current program (%)				% of total
	Bachelor	Masters	PhD	Studienkolleg[1)] & German language	
<20	1.8	0	0	0	1.8
20-25	14.5	14.5	0	3.6	32.7
26-30	1.8	29.1	7.3	0	38.2
31-35	0	12.7	9.2	0	21.8
36-40	0	3.6	1.8	0	5.5
Total	18.2	60.0	18.2	3.6	100.0

1) Studienkollegs are educational institutions in Germany where applicants for university places with foreign university entrance qualifications which are not equivalent to the German high school graduation (Abitur) are prepared for academic studies at German universities.

Source: Authors' survey

Marital status. 38.2% of the respondents were married at the time of the survey, and most of these were in the 31-35 year age group (Table 6). Two-thirds of them were living together with their spouse in Germany, whereas 28.6% had left their spouse in Nepal. Almost 5% of the spouses were living in third countries.

Table 6: Marital status of Nepalese students in Germany by age group (in %)

Age group	Marital Status (%)		% of total
	Single	Married	
<20	1.8	0	1.8
20-25	29.1	3.6	32.7
26-30	29.1	9.1	38.2
31-35	1.8	20.0	21.8
36-40	0	5.5	5.5
Total	61.8	38.2	100.0

Source: Authors' survey

Work experience and employment sector in Nepal. Almost 64% of the respondents had gained professional experience before they started their studies in Germany. Most had worked in national non-governmental or in international organizations (NGOs/INGOs) primarily in the development sector (Table 7). The majority had one to six years of work experience. Those with longer work experience had mostly served in the government sector.

Table 7: Students' employment sector and work experiences before coming to Germany (in %)

Sector	Years of work experience prior to studies					% of total
	<1	1-3	4-6	7-9	>9	
Government sector	0	1.8	1.8	1.8	3.6	9.1
Private sector	1.8	16.4	1.8	0	0	20.0
NGOs/INGOs	1.8	9.1	18.2	1.8	1.8	32.7
Public cooperation	0	1.8	0	0	0	1.8
Others	0	1.8	0	0	0	1.8
Total	3.6	30.9	21.8	3.6	5.5	100.0*

* including 34.5% without work experience.
Source: Authors' survey

International experience before arriving in Germany. One-third of the respondents had already been abroad before moving to Germany. Visiting a foreign country often has the effect of "priming the pump" for later international migration for higher education. For example, participating in a short training course abroad or an international conference may initiate personal connections and network participation to support the step to higher studies in a foreign country.

Field of study and highest degree in Nepal. Almost 60% of respondents had completed their bachelor/undergraduate studies before coming to Germany (Table 8), while 22% had only finished high school. The survey results indicate that Germany is attracting Nepalese students mainly in the fields of natural sciences, engineering, and agriculture; more than 40% of the respondents had studied these disciplines before coming to Germany. These students had left Nepal with the lowest educational degrees as compared to those from other study areas, i.e. they were seeking higher education abroad at a very early stage of their career.

Table 8: Study area and highest educational degree attained in Nepal (in %)

Field of Study	Highest degree in Nepal (%)				% of total
	High school*	Bachelor	Master	PhD	
Agricultural science & engineering	0	12.7	3.6	0	16.4
Engineering & Technology	0	29.1	0	0	29.1
Natural Science	20.0	5.5	5.5	0	30.9
Social Science	1.8	1.8	7.3	1.8	12.7
Management & Economics	0	1.8	0	0	1.8
Forestry	0	5.5	0	0	5.5
Literature & Cultural Studies	0	1.8	1.8	0	3.6
Total	21.8	58.2	18.2	1.8	100

*) 10+2 years
Source: Authors' survey

Current degree and field of study in Germany. Almost 60% of the respondents were studying for their masters (Table 9). 18% were in bachelor and a few were in PhD programs. One-third were studying engineering and

technology (32.7%), followed by agricultural sciences and engineering (14.5%), and medicine (12.7%). Altogether, those pursuing a master degree in engineering and technology formed the largest group with almost 22%.

Table 9: Current degree and field of study in German universities (in %)

Field of study	Current degree (%)			% of total
	Bachelor	Master	PhD	
Agricultural science & engineering	0	10.9	3.6	14.5
Engineering & Technology	5.5	21.8	5.5	32.7
Medicine	7.3	3.6	1.8	12.7
Natural Science	0	9.1	0	9.1
Social Science	1.8	3.6	3.6	9.1
Management & Economics	1.8	3.6	0	5.5
Forestry	0	7.3	3.6	10.9
Literature & Cultural Studies (German language)	1.8	0	0	5.5
Total	18.2	60.0	18.1	100.0*

*Including 3.6% at "Studienkolleg", i.e. learning German language, culture and literature.
Source: Authors' survey

Language of instruction in Germany. Most of the respondents were studying with English as the major language of instruction (67%); 25% studied in German, and 7% in both languages.

Funding of studies in Germany. The availability of financial resources is a critical precondition for pursuing higher education. However, less than half of the respondents had attained a secure external source of funding (Table 10).

The rest were managing their livelihood expenses by doing part-time work or with support from their family. None of those studying at the Studienkolleg[22] or bachelor level had a scholarship. 61% of the scholarship holders reported that they received funding through a German grant (mostly from the German Academic Exchange Service, DAAD); 23% obtained their grant from a German university, and 11% from a religious organization.

Table 10: Financing of studies

Scholarship/grant	**Current degree (%)**		**% of total**
	Masters	PhD	
Yes	29.1	18.2	47.3
No	30.9	0	52.7*
Total	60.0	18.2	100.0*
Source of funding			
German grant	42.3	19.2	61.5
Scholarship from a German university	3.8	19.2	23.1
Scholarship from religious institutions/church	11.5	0	11.2
Scholarship from other internat. organization	3.8	0	3.8
Total	61.5	38.5	100.0

*Including 21.8% Studienkolleg and Bachelor students
Source: Authors' survey

Legally, foreign students in Germany are allowed to work for 90 full days per year. Almost 60% of the respondents were engaged in paid employment outside of their studies. The most common reason given (by 66%) was that such jobs were necessary to cover living expenses; a second reason was the

22 Studienkollegs are educational institutions in Germany where applicants for university places with foreign university entrance qualifications, which are not equivalent to the German high school graduation (Abitur) are prepared for academic studies at German universities.

motivation to become economically independent from one's parents, and a third was the wish to gain experience for career enhancement (Table 11).

Table 11: Reasons for work during studies (multiple answers)

Reasons for work	Responses		% of respondents
	N	%	
Essential to help me cover my living expenses	25	32.1	65.8
To be independent from my parents	20	25.6	52.6
To gain work/practical experience	15	19.2	39.5
To build social networks	12	15.4	31.6
To support my family back home	6	7.7	15.8
Total	78	100.0	205.3

Source: Authors' survey

Reasons for studying in Germany. According to Dustman et al. (2009), individuals tend to acquire skills, which are highly rewarded in their home country but "produced" cheaply elsewhere. Moreover, students usually migrate to avail educational services in countries, which are recognised as well-established learning centres. Nepalese students may have more than one reason for seeking higher education in Germany. For this reason, multiple responses to each question in the questionnaire were possible; the answers were categorised into educational and non-academic reasons. 30% of respondents declared that good study conditions and comfortable infrastructure and equipment in the universities were their main reason for choosing Germany (Table 12). More than 63% had come to gain research experience in a specific field; 61% were attracted by the good reputation German institutions enjoy in their home country; and 28% wanted to experience a higher degree of academic freedom.

The most important non-academic reason to come to Germany was the exemption from tuition fees (56%), followed by the desire to attain a foreign degree (52%). 31% had been attracted by the possibility of funding their studies via casual work. 19% declared that they wanted to escape the situation in their home country, and the same share cited a desire to experience a new culture.

Table 12: Reasons to study in Germany (multiple answers)

Educational reasons	**Responses**		**Respondents***
	N	%	%
Better study conditions	39	32.2	72.2
Gain research experience in a specific field	34	28.1	63.0
Higher degree of academic freedom	15	12.4	27.8
Good reputation	33	27.3	61.1
Total	121	100.0	224.1
Non-academic reasons			
Scholarship/grant	10	7.6	20.8
No tuition fees	27	20.5	56.3
Gain foreign degree	25	18.9	52.1
Improve career opportunities	26	19.7	54.2
Want to be German alumni	11	8.3	22.9
Escape the situation in home county	9	6.8	18.8
Possible to support studies with casual work	15	11.4	31.3
Overcome unfamiliar situation/culture	9	6.8	18.8
Total	132	100.0	275.2

*) % of the valid cases considering this criterion as important
Source: Authors' survey

Length of stay in Germany. At the time of the survey, 58% of the respondents had stayed in Germany for one to three years. The number of students decreases with the length of stay since most complete their studies in due time and then return to Nepal or move to another country. Only 11% of

the respondents had stayed for four to six years. Few had received an opportunity to complete both their masters as well as their Ph.D degree in Germany. Some found a job in Germany in their field of interest after graduation.

Accommodation. The majority of the respondents (67%) lived in student dormitories while 25% used privately rented flats. 7% were staying with their parents or other relatives. University dormitories were preferred because they are comparatively cheap, provide furnished rooms and are usually located within the university premises, meaning that students need less time to commute to their lectures. In addition, new students find it easier to deal with university personnel rather than private landlords. An important benefit is the exchange of cultures among students from different parts of the world, which is rare in private flats.

Home visits. 38% of the respondents had visited Nepal during their study period; 20% had done so to visit their family, and 16% for conducting field research. One person had visited Nepal to pursue an internship.

Study performance. 61% of the respondents rated themselves as performing well in their studies, 20% as excellent; and 16% as average (Table 13). A number of cultural factors play a crucial role in this context. In Nepalese society, it is difficult as well as unaccepted to pursue a livelihood independent of one's family. Most often, rather, a person who has relative financial success must care for the living condition and well-being of others, and is responsible for securing the livelihoods of parents, siblings and other relatives. Considering these societal norms, students generally feel compelled to work hard to graduate in due time and to secure a good job afterwards. Nevertheless, in some cases, Nepalese students do not perform well because they are unable to focus on their studies due to challenges in adapting to the

new culture and environment or due to health problems or other personal troubles.

Table 13: Academic performance in the German university/institution

Academic Performance	N	%
Average	9	16.4
Good	34	61.8
Excellent	11	20.0
No response	1	1.8
English language competence		
Not improved	42	76.4
Improved	12	21.8
No response	1	1.8
German language competence		
Improved	48	87.3
Not improved	7	12.7

Source: Authors' survey

Language competences. Most of the respondents had already learned some German in their home country, and 87% were able to further improve their language skills over their stay (Table 13). Almost 22% were able to improve their English language skills due to the internationalization of higher education in Germany and communication with people from other parts of the world. Still, for the majority, their English language competences remained unchanged after their arrival in Germany.

Future plans for staying or relocating. Returnees who have upgraded their competences while abroad can have a positive impact on their home country's development. In order to assess this potential for Nepal, the respondents' intentions at present and prior to their arrival in Germany were considered in the survey. Table 14 shows that over the duration of their stay in Germany,

the share of those intending to remain increased from 3.6% to 9.1%, and in particular among master students; in contrast, none of the PhD students were planning to stay, neither before nor after their arrival. The share of those who originally intended to return to Nepal or were originally uncertain decreased.

Table 14: Intention to return to Nepal by degree programme and field of study

Degree programme	**Before Arrival (%)**			**Presently (%)**		
	Return to Nepal	**Stay in Germany**	**Not sure**	**Return to Nepal**	**Stay in Germany**	**Not sure**
Studienkolleg	3.6	0	0	3.6	0	0
Bachelor	10.9	0	7.3	7.3	0	10.9
Master	40	3.6	16.4	41.8	9.1	9.1
PhD	14.5	0	3.6	12.7	0	5.5
Field of Study						
Agricultural Science & Engineering	14.5	0	0	14.5	0	0
Engineering & Technology	12.7	3.6	16.4	10.9	7.3	14.5
Medicine	9.1	0	3.6	9.1	1.8	1.8
Natural Science	5.5	0	3.6	7.3	0	1.8
Social Science	5.5	0	3.6	5.5	0	3.6
Management & Economics	5.5	0	0	3.6	0	1.8
Forestry	10.9	0	0	9.1	0	1.8
Literature & Cultural Studies (German Language)	5.5	0	0	5.5	0	0

Source: Authors' survey

The intention to stay in Germany was highest among those studying engineering and technology, and their intention to stay even increased over the duration of their studies. No students of other fields planned to remain in the country, except for a modest share (1.8%) of medicine students.

The questionnaire did not ask for students' intentions to move to a third country after graduation. However, experience shows that Nepalese consider North America in particular an attractive destination for labour migration, even after having completed their higher education in other countries. The comparatively high share of those stating to be unsure when asked whether they want to stay in Germany after their studies or return to Nepal (25.5%) might be a reflection of these students' consideration of relocating to a third country.

International migration has long been seen mainly as a one-way street in the direction of the economically more developed countries (see e.g. King 2000; Oxfeld & Long 2004). However, at the global scale, about 50% of highly qualified migrants eventually return to their countries of origin after an average stay abroad of around five years (Lowell and Findlay, 2002). Return is more likely if spouses, children or dependents have been left behind in the home country (Kingma 2006). The decision to return home is highly influenced by expectations of political and economic changes in the home country; if the economic and political conditions, which had originally encouraged migration have not changed, there is little motivation to move back. This seems to be a crucial aspect of the return behaviour of Nepalese migrants, many of whom hesitate to move back primarily because of the persisting political instability in the country.

5. Conclusions

Human capital acquired through international education can play a significant role in the development of poorer countries like Nepal, where the higher education system faces major problems in terms of quality and inefficiency. In addition, political instability and recurrent nationwide strikes in the educational sector urge people to look for possibilities of accumulating human capital in other countries. Our survey has revealed that for many who have chosen this way, their time abroad is not without discomforts and hardships. This applies especially to those who study abroad without a scholarship and must find employment alongside their studies to secure their livelihood. It is a further challenge for Nepalese to integrate into German society as indicated by the low disposition to stay in Germany after graduation – in spite of the difficult situation in Nepal.

For Germany's economy, on the other hand, it would be beneficial if more Nepalese graduates would choose to stay, especially since a large share of them study in fields, which are in high demand on the German job market – mainly engineering and medicine.

This study does not explicitly reveal the factors, which are decisive for the decision to return or to stay. Further, it did not ask whether the students aim to migrate to a third country upon completion of their studies. Most probably, however, not until political conditions in Nepal are more stable will the country be able to reduce its loss of highly skilled people and to re-attract those who have accumulated valuable human capital abroad. Still, more intensive research is needed in order to gain a better understanding as to how the competences of Nepalese students in Germany can be put to the best use – so as to satisfy the students' interests as well as the interests of their host country and their country of origin.

Chapter 5: Students from Indonesia

Indonesian students in Germany: integration and return plans

Wildan Syafitri, Robert Williater Sibarani & Beatrice Knerr

Abstract

Germany is one of the major destination countries for Indonesian students, and the Indonesian government currently follows a policy aimed at increasing the number of Indonesian students studying in Germany. However, integration at different levels is still a problem for many of them. It is therefore necessary to better prepare these students for their studies in Germany in order to make their stay more successful. In this light, our research seeks to explain the various aspects of Indonesian students' integration in Germany as well as their plans for returning to Indonesia. Based on an online survey and a focus group discussion, our results show that the major problems they meet are language hurdles, adverse climate and weather conditions as well as difficulties in cultural adaptation. These findings can be used to guide the provision of advisory services to Indonesian students before they leave for Germany as well as upon their return to Indonesia.
Keywords: integration, international migration, Indonesian students, returnees

1. Introduction

Experience shows that for many Indonesian students, professional and social integration is a major problem when they take up their studies in Germany. This causes difficulties for them when participating in essential activities in their studies, such as group discussions or examinations, and also in their daily lives, for example, when it comes to socializing with fellow German students or getting a part-time job. Some find these obstacles insurmountable

and return to Indonesia without graduating – an occurrence that is not only tragic for the student but also for Indonesia as a nation which views each graduate who returns home as a potential asset for its economic development. At the same time, many of those who are successful in their academic performance and integration try to find suitable employment in Germany after their graduation. Hence, supporting the integration of Indonesian students into academic and everyday life in Germany is essential both for reducing personal hardship as well as for avoiding a waste of human capital. To this end, our research project tries to identify the major hurdles to the integration of Indonesian students in Germany and to explore their return plans. It focuses on the following specific questions: (1) How do Indonesian students integrate into German culture and society? (2) Which measures does the Indonesian government undertake to enhance students' human capital formation? (3) To what extent and under which conditions do the students plan to stay in Germany after graduation? (4) What are their expectations in regard to job opportunities in Germany?

These inquiries were pursued by conducting a survey among Indonesian students in Germany, which was complemented by a basic literature review. Relevant primary data regarding personal characteristics, status of integration, academic performance and prospects to return to Indonesia - was collected by sending questionnaires to students identified by snow-ball sampling. In addition, a focus group discussion involving students from the cities of Hanover, Goettingen and Kassel was conducted to support the investigation.

Our results are relevant for Indonesian as well as German policymakers. Information concerning the academic performance and progress of Indonesian students in Germany can help the Indonesian government prepare outgoing students and to offer suitable and attractive employment possibilities for graduates. This would benefit the returnees as well as Indonesia's

development. Also, the German government receives information concerning students' personal and academic background, level of integration, field of specialization, future location plans, and the general attitude of Indonesian students in Germany. Using this information, it might be able to enhance the country's attractiveness to Indonesian students and open useful opportunities for those who consider staying in Germany.

The paper is organised into seven parts. Following this introduction, section (2) will give an overview of Indonesians studying abroad. The methodology is described in section (3), while section (4) gives the state of research. Section (5) presents the integration and return plans of Indonesian students in Germany and section (6) provides the results of our survey; section (7) offers our conclusions.

2. Indonesian students abroad: an overview with a focus on Germany

At least 82 public and 2,880 private universities in Indonesia are offering studies at the undergraduate or postgraduate level (DIKTI[1] 2011). Nevertheless, many Indonesian students choose to study abroad, essentially for two reasons: first, to receive a higher-quality education as compared to that which can be acquired in Indonesia; and second, to be able to obtain a job in a foreign country after their graduation from a university there.

Indonesians who have graduated from foreign universities are a potential asset to their home country; after their return they can contribute to national development by working in fields in which they are able to apply their accumulated knowledge and skills. Those who become employed in universities can considerably contribute to the further accumulation of valuable human capital by sharing their knowledge and experience with their

[1] Directorate General of Higher Education of the Republic of Indonesia

students, as teaching activities transfer science and technology fast and directly. In this context, the government can play an active role by helping to accommodate the returnees into jobs with attractive salaries and working conditions.

Between 1998 and 2011, the number of Indonesians moving abroad for their studies steadily increased from 25,620 to 34,889 (see Table 1). In 2012, almost 35,000 students from Indonesia were abroad; the major destinations according to UNESCO statistics were Australia (9,431 students), Malaysia (7,989), the United States (6,907), Japan (2,213), the UK (1,442) and Germany (1,384) (Table 2) (UNESCO 2014). Since 2008, DIKTI has provided international master and PhD scholarships to permanent lecturers of Indonesian universities. From its inception until 2010, 2,154 lecturers were sent abroad under this program (DPTK 2011) with a budget *of IDR 2 trillion (€ 166 million) (*Republika 2011).

Table 1: Indonesians studying abroad

Year	Number	Indicator (2000 = 100)[1)]
2000	32,114	100.0
2001	33,463	104.2
2002	36,995	115.2
2003	37,046	115.4
2004	31,410	97.8
2005	30,091	93.7
2006	28,384	88.4
2007	31,082	96.8
2008	32,343	100.7
2009	33,806	105.3
2010	34,507	107.5
2011	33,888	105.5
2012	34,999	109,0

[1)] Change based on an index of 100% in the year 2000
Source: Based on data from UNESCO (2014)

Table 2: Top ten host countries of internationally mobile Indonesian students, 2012

Country	Number of students	% of total
Australia	9,431	26.9
Malaysia	7,989	22.8
United States	6,907	19.7
Japan	2,213	6.3
United Kingdom	1,442	4.1
Germany	1,384	4.0
Netherlands	910	2.6
Saudi Arabia	707	2.0
Canada	612	1.7
Korea, Rep.	612	1.7
Total number of international Indonesian students	34,999	92.0

Source: Based on data from UNESCO (2014) and authors' calculations

Studying abroad is an opportunity for Indonesians to further enhance their individual capabilities and their quality of life. It enables them to master one or more foreign languages, advance their research competences, and develop international networks with members of their foreign host university. Studying overseas, however, requires sufficient funds to pay tuition fees and to cover living expenses, and this amount is not easily available to the average Indonesian student. Based on their source of finance, those who manage to study abroad can be divided into four categories: (a) those who are self-financed (i.e. funded by their family or their own savings) and do not have an employment contract with an Indonesian institution; (b) those who hold a scholarship from Indonesia or a foreign institution, e.g. a foundation, a religious community or a research institute; (c) those who are self-financed but simultaneously have a job contract in Indonesia obliging them to return to their employment after their graduation; and (d) those who have a scholarship from the Indonesian or a foreign government, who previously worked at an educational institution, research institute or a government office and are

expected to return to this job afterwards. This final category is specifically targeted at lecturers, researchers, and government employees. Generally, any lecturer or government employee studying abroad is bound to special regulations of his/her institution, although these regulations differ from one institution to another.

The long-term development cooperation between Indonesia and Germany in the education sector, which had already begun in the 1950s, has attracted a considerable number of Indonesian students to Germany. The first Indonesian to study in Germany came in 1952 under a scholarship provided by DAAD. Until 1974, Indonesians were the second largest group of foreign students in the country (after the Turkish) with 7% of the total (Isserstedt W. and Schnitzer K. 2005). Most Indonesian students today live in the federal state of North Rhine-Westphalia, which hosts several institutions of higher education with notable reputations, such as TH (Technical University) Aachen, FH (University of Applied Science) Aachen, and FH Cologne.

As shown previously, 4% of the Indonesians studying abroad in 2012 went to Germany. According to DAAD-HIS data, 2,646 Indonesians studied in Germany in 2012, which corresponds to 1% of all foreign students in the country (DAAD & HIS 2014).

Between 2000 and 2011, the number of Indonesian students who graduated from German institutions increased from 140 to 591 (Table 3). Still, the growth rates show considerable fluctuations, swinging regularly from positive to negative.

Table 3: Graduations of Indonesian students in Germany 2000 – 2011

Year	Total	Annual growth (%)
2000	140	n.a.
2001	226	61.4
2002	229	1.3
2003	281	22.7
2004	288	2.5
2005	359	24.7
2006	351	-2.2
2007	362	3.1
2008	498	37.6
2009	461	-7.4
2010	485	5.2
2011	591	2.2

Source: DAAD and HIS (2014)

3. Methodology

The primary data for this research was collected in 2011 among Indonesians studying at the universities of Hanover, Goettingen and Kassel through the use of an online survey. The candidates were selected by convenience and snowball sampling. Altogether 100 e-mail unique addresses were collected to where links to our questionnaires were sent.

The questionnaires consisted of three parts, namely (a) the respondents' personal characteristics; (b) their perceived level of adaptation and integration; and (c) their perspectives for returning to their country of origin. Since the data was collected via an online survey, the respondents had to fill the questionnaire without assistance from an interviewer. A major problem with this form of survey is the low rate of response as compared to conventional face-to-face interviews. To encourage greater participation, the researchers sent a reminder email to the recipients one week after the questionnaire was sent. In the end, 35 fully completed questionnaires were returned.

To support the data analysis and interpretation, a focus group discussion involving seven students from Hanover, Goettingen and Kassel was organised. The results were analysed by the statistical package SPSS and are presented in this paper using descriptive statistics.

4. State of Research

Key concepts

"Integration", "human capital" and "education" are key concepts in this research. "Integration" is the process of immigrants' inclusion into the institutions and relationships of the host society (Bosswick and Heckmann 2006). The International Organization for Migration (IOM 2011) emphasizes that it includes all aspects of life in the new society. It may also lead to diverse cultural influences in the host society, which can be used constructively as a path to social coherence and unity. Integration processes should support migrants in participating in social life, economic activities, and culture in the host country. Successful integration is characterised by mutual adaptation of migrants and the host society (IOM 2006).

The concept of "human capital" emphasizes that education and the development of skills are key factors in economic activities (Olaniayan and Okemande 2008). It is defined as investment in areas that improve an individual's productivity in the labour market, as well as in non-market activities, by education, health, on-the-job-training, and migration (Sharpe 2001). At the same time, the accumulation of human capital is a major determinant of economic growth. Accordingly, out-migration of highly qualified labour force may imply losses of output for the country of origin, while at the same time it may constitute a subsidy to the destination country.

In turn, if migrants return to their country of origin, education and training received abroad may promote human capital formation and economic development at home (ADB 2005).

Benefits for the host country

Demange et. al (2008) who studied the mobility of postgraduate students, concluded that under the conditions of unrestricted international labour mobility, governments can reduce their expenditures on education by employing highly-qualified labourers from abroad.

The role of networks

Empirical evidence demonstrates that social networks play an important role in the choice of the study destination since they promote chain migration and stimulate mobility. The social capital embodied in personal relations provides connections, which facilitate access to economic resources such as information, employment or higher wages (Coleman 1990; Arango 2000). Through networks, knowledge about working and study conditions, required skills and qualifications is transferred to the potential migrants in the region of origin – thereby facilitating decision-making, preparation and adaptation and reducing transaction costs.

Adaption and integration

From a survey among 201 Indonesian students attending several universities in Germany, Yuniarti (2009) reports that their adaptation to living and study conditions is decisively determined by the place of residence, friendships, their degree of freedom and weather conditions. Family ties and social interaction with other Indonesians provide essential support. The study also

shows that more than half of the students strictly maintained their Indonesian values and behaviour.

Novera (2004) investigated cultural values and adjustment processes by surveying 25 Indonesian postgraduate students in Victoria (Australia). He found that for Muslim students, major challenges were linked to the language of study, study requirements, uncomfortable facilities, use of negative stereotypes, and consumption of alcohol and non-halal food. However, a clean environment, helpful student services and facilities, friendly people, and tolerance toward those who have different beliefs and customs - are circumstances, which foster a good integration into social life.

Yussoff (2011) examined the relationship between social support on the one hand, and self-efficacy (i.e. one's personal capability to effectively handle stressful situations) and socio-cultural adjustment on the other hand by using factor analysis and regression with data obtained from 185 international undergraduate students enrolled in Northern Malaysia, including Indonesians. His results show that support by friends is positively related to cultural empathy, personal relations, and cultural exchange, and that social relationships - especially with Malaysian friends - are crucial for international students' socio-cultural adaptation. Furthermore, the study suggests that international students who are more self-efficacious are also more likely to experience cultural empathy.

5. Framework of study in Germany

Every Indonesian student who wants to study in Germany must be fluent in German and/or English. To enter at the bachelor level in a university or a university of applied science[2], all candidates who graduated from an

2 The German term is Fachhochschule.

Indonesian senior high school (*Sekolah Menengah Atas*-SMA) must take a German language course and then study for one year in a *Studienkolleg* (student college) where their competences are brought to an equal level with that of German high school graduates. Bachelor graduates from Indonesia participating in German master programs need a recognized certificate of German proficiency, while those who want to enter English-taught master programmes must have a recognized certificate of English proficiency.

When studying in Germany, Indonesians should be able to integrate themselves into the academic activities as well as into the German social environment in which they live. These are basic requirements for being in a position to attend lectures, participate in group discussions, undergo oral and written examinations and make presentations in English and/or German.

Integration into German society requires adjustments to its common way of life, habits and customs. In many cases these adjustments proceed indirectly via the Indonesian social network. Most Indonesian students join the Indonesian Students Union[3] which is found in 19 cities in Germany and offers a broad spectrum of activities - international seminars, "feasts of integration" (i.e. dinner invitations to Indonesian food), and cultural and sports events. By participating in these programmes, Indonesian students also socialize with the family members of Indonesians who are married to Germans or with German friends who have come with Indonesians – thereby providing students with opportunities to get in closer contact with local families. On such occasions students also exchange knowledge about job and career possibilities in Germany. Those who do not receive scholarships also use these events for getting information about part-time jobs, which may help them to cover their living expenses.

3 Vereinigung Indonesischer Studenten in Deutschland e.V./Perhimpunan Pelajar Indonesia di Jerman – PPI Jerman

Indonesian students in Germany work in various fields, e.g. in restaurants or student canteens, as mail or newspaper carriers, babysitters or factory workers. In doing this, they not only earn money but simultaneously practice time management skills as wells as their social skills with Germans, both of which are useful for their integration and future career. Establishing networks with Germans benefits them during their studies in Germany as well as afterwards.

The ability to integrate into academic activities determines whether the student can successfully pursue his/her studies in Germany, has to return to Indonesia, or moves on to a third country to continue his/her studies. Many have already decided before they leave for Germany that they will return to Indonesia after graduation because they have a job contract, which obliges them to do so. Others can plan their future career more freely. If they get an attractive job in Germany, they may choose live and work there, provided they are able to integrate themselves socially.

6. Survey results

The personal characteristics - age, sex and marital status - of the respondents of our survey are shown in Table 4. The majority were between 30 and 40 years old, male and married. Most of them were masters or PhD students. Their relatively older age as compared to other nationalities is due to the fact that usually, after having graduated from a bachelor program at an average age of 24 years, Indonesians first look for a job and enter into a masters or PhD program only after having worked for two to five years. In addition, most of those who had received a government scholarship because they were employed as civil servants had been obliged to work in the public sector for several years before receiving the opportunity to pursue higher education

abroad. Therefore, Indonesians are generally at a relatively advanced age when starting a masters or PhD.

Table 4: Personal characteristics of Indonesian students

Age	Sex		Marital status	
	Male	Female	Married	Not married
20 ≤ 25	3	0	0	3
25 ≤ 30	5	5	7	2
30 ≤ 40	17	4	15	6
40 ≤ 50	1	0	1	0
Total	26	9	23	11

Source: Authors' survey

Those who are married usually bring their spouse and children to Germany. A major reason for this is that bringing along one's family makes it easier for them to keep their customary culture and food habits while living far from home. Another advantage of bringing family abroad is the low cost of high-quality education for the children.

Table 5 shows the respondents' educational level achieved in Indonesia. Most students had completed a bachelor or master program before moving to Germany and then continued at the master or PhD level. Agriculture, livestock & forestry as well as machinery & electronics were their major fields of study. Almost all of the respondents (91.4%) followed the same field of studies in Germany as they had previously in Indonesia.

Most respondents who were also working a paid job in Germany had chosen either business & economics or machinery & electronics; 22.2% of those working such jobs were studying each subject (Table 6).

Table 5: Education of Indonesian Students

Education	Respondents	%
Level achieved before coming to Germany		
Master	19	54.3
Bachelor	11	31.4
Higher education	4	11.4
Vocational program	1	2.8
Total	35	100.0
Level currently pursued in Germany		
PhD	18	58.0
Master	9	29.0
University of Applied Sciences*	2	6.4
Diploma	1	3.2
Bachelor	1	3.2
Total	31	100.0
Fields of study in Germany		
Agriculture, livestock and forestry	7	22.6
Machinery & electronics	6	19.4
Business & economics	3	9.7
Mathematics & natural sciences	2	6.5
Computer sciences & informatics	2	6.5
Language, arts & religious education	2	6.5
Geography, geology & meteorology	2	6.5
Medical	1	3.2
Social sciences	1	3.2
Others	5	16.1
Total	31	100.0

* Fachhochschule (FH)

Source: Authors' survey

Table 6: Subjects of students working in paid jobs in Germany

Study area	Respondents	%
1. Business & economics	4	22.2
2. Mathematics & natural sciences	2	11.1
3. Machinery & electronics	4	22.2
4. Computer sciences & informatics	2	11.1
5. Languages, arts & religious education	1	5.6
6. Geography, geology & meteorology	1	5.6
Others	4	22.2
Total	18	100.0

Source: Authors' survey

The most important sources of funding for Indonesian students in Germany were scholarships from the DAAD (German Academic Exchange Service), which provides long-term fellowships as well as short-term research grants, supports visiting scholars and helps to establish university collaborations out of public funds. The DAAD office in Jakarta, established in 1990, promotes academic exchange between both countries by providing information about institutions of higher education and research institutes in Germany, as well as about study, research and fellowship opportunities. Indonesia is among the target countries framed by bilateral initiatives to attract highly-qualified international students and researchers to Germany.

22.8% of the students were funded by their parents, and the same share out of their own resources (i.e. savings and/or jobs). 17.1% were financed by the Indonesian government, which provides two kinds of scholarships:

1. *DIKTI scholarships.* By Indonesian law, lecturers must have a higher educational level than their students because they hold a central role in the academic system, and their competences decisively determine the quality of any higher education institution. To support this, starting in 2008, DIKTI has offered scholarships to lecturers who wish to pursue masters or PhD degrees at overseas universities.

2. *Indonesian – German PhD scholarships (IGDS).* The so-called "Debt Swap Program" is intended to reduce Indonesia's foreign debts through agreements with Germany that allow the Indonesian government to spend previously borrowed money for purposes of public interest instead of repaying the loans in a traditional sense. Within that framework, the Indonesian Ministry of National Education proposed the Indonesian-German Postgraduate Scholarship Program with the aim of improving the quality of higher education in the country. Its targets will be reached by following a Strategic Plan (*Renstra*) and via bilateral university cooperations. In 2010, the Fourth Debt Swap Program for Education was established at a budget of 20 million Euro.

Table 7 displays the respondents' sources of funding, duration of work contracts and time spent studying or working at the university at the time of the interview. The funding contracts could be for scholarships and jobs as student research assistants or (after master graduation) research assistants. Most hold a scholarship or a contract as a research assistant for one to three years.

The majority of the respondents had worked and studied in Germany for up to three years, which is a normal duration for a German masters or PhD program. Staying up to one year in Germany is required for those enrolled in a "sandwich" program, particularly if this is a PhD program. PhD students usually need four to five years to complete their dissertation, but the scholarship contract normally comprises only three years with the option to apply for a prolongation of six to twelve months. Many of those who receive scholarships from DIKTI and DAAD apply for such an extension; the respondents usually received only a six month extension. Afterwards, some opt to work part-time jobs to cover their living expenses.

Table 7: Funding, duration of contracts and duration of study in Germany

Source of funding (N = 35)	**Respondents**	**%**
Indonesian government	6	17.1
German government (DAAD)	10	28.6
German non-governmental institutions	3	8.6
Parents	8	22.8
Self-financed	8	22.8
Duration of funding contract (years) (N = 34)		
0 – 1	3	8.1
1 – 3	23	62.2
4 – 5	5	13.5
5 – 10	2	5.4
≥10	4	10.8
Current duration of study and/or work at university (years) (N = 34)		
0 – 1	10	29.4
1 – 3	11	32.4
3 – 5	3	8.8
5 – 10	7	20.6
≥10	3	8.8

Source: Authors' survey

Most respondents had finished an intermediate level German language course before taking up their studies in Germany (Table 8). German language competences of this level are required by many masters and PhD programs at German universities. Also, basic knowledge of the German language is necessary for communicating with Germans in everyday life.

Table 8: Level of German language ability (based on the last course)

Level of studies	Basic	Intermediate	Advanced	Total
Bachelor	0	0	3	3
University of Applied Science	0	2	0	2
Diplom	0	0	1	1
Master	4	5	0	9
PhD	7	11	0	18
Total	11	18	4	33

Source: Authors' survey

Most of the students (57%) use English in their studies, indicating that they follow international study programs; 34.3% mainly use German while 8.6% work with both languages. In their daily life, PhD students regularly communicate in Indonesian, English and German, while master students do so in German and English (Table 9).

Table 9: Daily language use according to level of studies

Level of studies	Daily language		
	German	English	Indonesian
Bachelor	2	0	1
University of Applied Science	1	0	1
Diplom	1	0	0
Master	6	5	0
PhD	5	6	7
Total	15	11	9

Source: Authors' survey

Table 10 shows data that characterizes the respondents' networks, level of integration and indicators of adaptation. Usually, Indonesian students already have created personal networks by the time arrive in Germany. First, they choose a programme appropriate for their field of interest and select a

university accordingly. Afterwards they contact Indonesian students who are based at the chosen institution. Communication with senior students helps the candidates to obtain information about study programs, university life, academic activities, and accommodation. Usually, the established relationships continue after the candidate's arrival in Germany, and the senior students introduce the freshmen to the local Indonesian community.

During their studies in Germany, language barriers, climate conditions and weather pose the greatest challenges to the Indonesian students (Table 10). Although the possess a German or English language certificate, many still face difficulties in communicating in real life conditions, such as when they must be engaged in presentations, discussions, examinations, or paper writing. Germany's climate and weather are considered as particular hardships; four seasons with drastically varying temperatures is very different from life in Indonesia where there are just two seasons that differ mainly by the amount of rainfall. The winter season is particularly difficult for Indonesian students. Still, almost one-quarter of the students stated that they do not face any serious obstacles.

Most of the respondents communicate on a daily up to at least a weekly basis with other Indonesians, which usually is easy because many live in the same dormitory as other countrymen and often take the same classes or work at the same place. Moreover, there are habitually at least several Indonesian families living in the same city, enabling convenient social contact with members of other families. During their studies in Germany, Indonesian students commonly join international or German associations, including professional groups in their field of study – such as EADI (European Association of Development Research and Training Institutes), *Ikatan Ahli Pertanian Internasional* (International Association for Agricultural Experts), or *Ikatan Ilmuwan Indonesia International* (Indonesian International Association of

Scientists) – or student groups like ASTA (*Allgemeine Studierendenauschuss*), the general student committee found at each university. They also commonly join Indonesian organizations in Germany, mostly religious ones, such as Muslim recitation groups, FORKOM (Forum of Moslem Communication), *Perhimpunan Pelajar Kristen Indonesia* (PERKI/Indonesia Christian Student Association), *Himpunan Masyarakat Batak Bona Ni Pasogit Indonesia* (Association for Batak Ethnic Society coming from Bona Ni Pasogit Indonesia), *Perkumpulan Orang Bali* (Association of Balinese) – or organizations of Indonesian students in Germany - such as *Perhimpunan Pelajar Indonesia* (PPI; Association for Indonesian Students) and IASI (Indonesian Association of Scientists and Graduates) - which are located in several cities across the country. By joining such organizations, and particularly religious groups, Indonesian students strengthen the brotherhood among themselves as well as with the broader Indonesian community in Germany. Religious activities are scheduled by the students regularly on a weekly basis, and it is a habit that after the religious ceremonies the meeting is continued by eating, drinking, and singing together.

Most people who guide Indonesian students in adapting to life in Germany are fellow students/workers, Indonesians as well as Germans, friends, boy/girl friends, or student mentors imparted by the University. Indonesian student organizations usually maintain good relations with the governments of both countries such that they are often invited to participate in public cultural events. They also have many informal relationships with local governments, universities, and the German student population through their participation in sports (like badminton or table tennis), music festivals organized by art groups, or cultural events such as *Kulturtag* which is organized by German students. Many Indonesian families already settled in Germany help Indonesian students to integrate into the social environment. In

particular, Indonesians who are married to Germans often help students in their adaptation to cultural and social life.

Table 10: Indonesian students' networks, integration, and adaptation

Major difficulties in work and/or studies	**Respondents**	**%**
Language problems	13	24.1
Climate / weather	13	24.1
No serious obstacles	12	22.2
Social and work culture	9	16.7
Communication with boss/teacher	5	9.3
Workload is overbearing	2	3.7
Total	54	100.0
Communication with Indonesians in Germany		
Every day	16	45.7
Once a week	15	42.9
Once a month	3	8.6
Less than once a month	1	2.9
Total	35	100.0
People who help most in adapting to life in Germany		
Indonesian fellow students/workers	17	48.6
Germans	11	31.4
Non-German comrades	5	14.3
Indonesian families in Germany	2	5.7
Total	35	100.0

Source: Authors' survey

Table 11 shows the respondents' future plans and expectations. The majority intend to return to Indonesia after graduation. Most of them were formerly lecturers at various universities in Indonesia and received scholarships from Indonesian institutions or from DAAD; hence they are obliged to contracts requiring them to return to share their knowledge and experience with others

at their home institution. However, nearly 30% stated that they have not yet decided where they will move after their graduation.

Most of those who have worked during their studies in Germany expect favourable opportunities for getting a job in the country after their graduation on the basis of their previously acquired experiences (Table 11). However, this opportunity can only be realised by those who are not bound by contract to an Indonesian institution for which they worked prior to moving to Germany.

Table 11: Future plans of Indonesian students

Expectation	Respondents	%
Return to Indonesia after study and/or work		
Yes	22	62.9
No, I plan to continue to work in Germany	2	5.7
No, I will go to another country	1	2.9
Do not know	10	28.6
Total	35	100.0
Getting a job in Germany – for those who have already worked in Germany		
Will be easier	9	60.0
Not much difference	3	20.0
Do not know	3	20.0
Total	15	100.0

Source: Authors' survey

More than 90% of the respondents stated that they would recommend a study in Germany to other Indonesians who are considering it. They also shared the opinion that students should aim to start to plan their studies in Germany early in their university career so as to give them enough time to learn or improve their German or English language competences and to find a scholarship.

7. Conclusions

Our results demonstrate that the most important factors through which Indonesian students integrate themselves into German culture and society are:

- *Mastery of the German or English language.* Language is an essential tool for interacting within German culture, society and academic life, as well as for receiving all kinds of information about the host country through mediums (such as newspapers, TV, etc.) which help them to understand their social environment;
- *Joining organizations*. These enable students to interact with Germans and thus receive useful information to facilitate their adaptation process; and
- *Attending ceremonies or parties;* These are informal meetings held by religious, civic or student groups. On such occasions, Indonesians married to Germans who have lived in the country for many years often bring their family members along, thereby providing Indonesian students with opportunities to interact informally with Germans, which helps to deepen their understanding of German culture and society and strengthen their networks.

Most of our respondents who had worked under contract during their studies in Germany expected to find a better job in Germany in the future. Although their current employment was often dissimilar to their desired future occupation, the competences and experiences they had gained through their jobs – time management and communication skills, for example – had given them a foundation within the German working culture, including an understanding of salary levels. The opportunity to obtain a higher income in Germany as compared to what would be expected in Indonesia for a similar activity is a major reason for considering employment in Germany. Because of the exchange rate between the Euro and the Indonesian Rupiah, it is more profitable for students to work in Germany instead of Indonesia and to remit

part of their income to Indonesia where it has a higher purchasing power. Many Indonesian graduates - especially those who are specialized in fields like machinery and electronics, which are highly demanded in the German labour market - face excellent opportunities to apply their knowledge and skills in advanced industrial companies in Germany and to find a position that fits their profile. However, although many of our respondents expected that they could get a better job in Germany than in their home country, most felt compelled to return to Indonesia. This situation has many positive implications for the Indonesian economy. For those who choose to work in universities - as many will do - their acquired knowledge will be shared with students and colleagues; many will engage in joint research projects with their previous universities in Germany; and they will encourage their students to study in Germany in similar fields. Supportive to this are the official agreements between Indonesia and Germany (such as scholarship programmes), which are viewed as key efforts of the Indonesian government to enhance the country's human capital.

At the same time, the return of Indonesian students to their home country might constitute a loss of human capital for Germany, especially if they graduated in the fields of machinery, IT, electronics, or other engineering disciplines. An additional employment phase in Germany following graduation might benefit both countries. It would enhance the available educational and professional competences in Indonesia due to the higher qualification of the returnees (Demange et. al 2008), while the employment of a highly-qualified and productive labour force from among the Indonesian academic community in Germany would contribute to Germany's economic development (Haupt et al. 2010). Therefore, it is recommended that the German and Indonesian governments to take steps to facilitate temporary postgraduate employment of Indonesians in German universities and companies prior to their return to Indonesia.

Still, there remains the danger that a significant share of the human capital that can be gained by Indonesian students in Germany is wasted or forgone due to insufficient integration and adaption into academic and social life in Germany. When students fail to integrate and adapt, their academic success and knowledge acquisition are negatively influenced, causing many to return home or move to a third country before graduating. To avoid this situation, it is crucial that students are well-prepared before they leave for Germany and that, following their arrival, they are appropriately guided and supported according to their specific needs.

Chapter 6: Students from Iran

Educational profiles and mobility plans of Iranian students in Germany

Sudeh Dehnavi & Beatrice Knerr

Abstract

Each year many young people leave Iran to study in Germany. A significant share of them have already decided prior to their move to Germany that they wish to either settle in Germany or to move to a third country following their graduation, instead of returning to Iran. This paper takes a closer look at the return plans of Iranian students living in Germany and how they are related to their fields of study, language skills, number of friends, level of education, and other personal characteristic. To this end, we conducted a survey among Iranian students at different German universities. The results are analysed using descriptive statistics.
Keywords: Iranian Diaspora, Iranian students abroad, migration to Germany

1. Introduction

Since the early 2000s, the number of Iranians moving to Germany for study purposes has exhibited an increasing trend. Many of them engage in fields of study, which are in high demand in the German labour market; hence Germany´s economy would profit if these students would choose stay in the country after their graduation. There is thus an interest in retaining these graduates. But to what extent can this be achieved? The investigation presented in this paper seeks the answer to this question by considering the mobility plans of Iranian students in Germany. The research presented seeks to contribute to a deeper understanding of their future plans in the context of

their personal characteristics, living situations, and experiences. Specifically, we explore the following questions: 1) What is the personal profile of Iranian students who have come to Germany for higher education? 2) Why do Iranian students choose Germany as their destination country for further studies? 3) What are the return plans of Iranian students according to age, gender, degree of social integration, area of specialization and language skills? The analysis is based on a survey among 43 Iranians who entered Germany for study purposes between 2004 and 2010. The results are shown by quantitative descriptive statistics.

The following section (2) presents a historical view of Iranian migration to Germany; section (3) gives an overview of the number and composition of Iranian students in Germany; section (4) explains the methodology; section (5) shows our survey results; and section (6) offers our conclusions.

2. Iranians living in Germany – a historical perspective

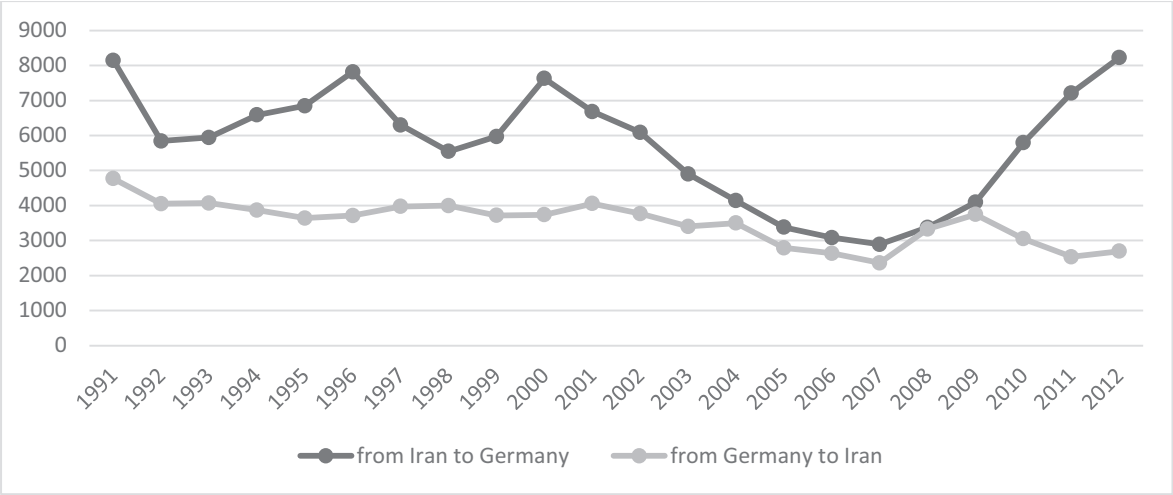
The migration of Iranians to Germany in the 21st century cannot be understood without considering earlier movements in the 19th and early 20th century, which laid the foundation for follow-up chain migrations. From the beginning, migration has been closely linked to higher education. However, it has also been largely influenced by changing political conditions in Iran, the period of the repressive Shah regime and the following Islamic Revolution in the second half of the 20th century being striking examples.

The Iranian community is a significant group in Germany's economic and social context due to its size, its long immigration history, and the high qualifications of its members who have contributed important services to a number of domestic sectors, including the health sector. Over time, Iranians have developed into an integral part of German society (Shenavari 2009).

The history of Iranian migration to Germany dates back to the early 20th century. During the time of the so-called "Weimar Republic" between 1918 and 1933 - a period in which Germany was for the first time in its history a democratic state - about 1,000 Iranian nationals were living in the country. In 1939 when the Nazi government under Adolf Hitler seized power and the Second World War began, 642 Iranians were still registered in the "German Empire" (Deutsches Reich). In 1943, the Iranian community in Berlin was comprised of 190 members, most of them students and trainees (Shenavari 2009), which demonstrates the central role which education has played in migratory movements from Iran to Germany. At the same time, an important community of Iranian business traders had already established themselves in Hamburg, a community, which still exists in the 21st century.

After the Second World War the immigration of Iranians to Germany gathered momentum. Until the 1960s, students and businessmen (mainly engaged in international trade) comprised the majority of immigrants. Between 1961 and 1969 the Iranian Diaspora increased from 6,160 to 17,000 persons, a number which thereafter remained relatively stable throughout the 1970s (Shenavari 2009). By 1978, many of the 20,000 Iranians living in Germany were relatively assimilated into German society, and had already shifted their centre of life to here. These Iranians had often married a German partner (at the time, these were mostly Iranian men rather than Iranian women); established a business; or were academics in the fields of medicine, engineering or other sciences, who, for political reasons or fear of prosecution in their home country, preferred working in Germany to returning home where the repressive Shah Regime was in power. Following the Islamic Revolution in 1979, the Iranian-Iraqi War from 1980 to 1988 drove thousands more to claim political asylum in Germany, thereby significantly enlarging the Iranian Diaspora and simultaneously changing its social structure.

Fig. 1 Migration between Germany and Iran, 1991-2012



Source: Based on data from Bundesamt für Migration und Flüchtlinge (Federal Office for Migration and Refugees (2014)

At the end of 2012, 57,275 persons with Iranian nationality were registered in Germany, which amounted to 0.8% of the country's foreign residents (FSOG 2013). The share of females was largely stable over the years at around 44%.

Table 1 shows the categories under which residence permits were given to people with Iranian nationality. Most of them were "residence titles for specific purposes and exceptional leave to remain" (29.7%). Family reasons and studying were the second and third most common categories, with 17.5% and 17.2%, respectively. Only 4.5% of the total resident permits issued for Iranians in that year were for working purposes, which corresponds to 0.6% of all foreigners in this category.

Table 1: Number of issued residence permits for Iranian nationals, 2009

	Residence permit							Settlement permit	EU-right to residence	Specific purposes	total
	Study	Language course and school attendance	Other trainings	Employment	Humanitarian reasons	Family reasons	Other reasons				
Issued residence permits for Iranians	563	5	25	147	104	573	11	58	16	974	3278
Iranians as % of total issued	1.8	0.10	0.6	0.6	1.4	1.2	0.4	1.5	0.1	4.6	0.8
Share of permits in each category (%)	17.2	0.2	0.8	4.5	3.2	17.5	0.3	1.8	0.5	29.7	

Source: Based on data from Bundesamt für Migration und Flüchtlinge (2010)

Table 2 shows the number of naturalizations of Iranian nationals from 2000 to 2012. It peaked in 2000 and afterwards declined; this is because in 2000, the requirements to receive German nationality were eased and therefore many applications which had been pending for many years were processed (so-called "naturalization jam" ("Einbürgerungsstau"). In 2012, the number of naturalizations had dropped to a low of 2,463 (Table 2). All of these persons kept their Iranian nationality, thereby assuming double citizenship, since Iranian law does not allow the forfeit or loss of one's Iranian nationality by any procedure. On average, those who were naturalized over the period 2000 to 2012 had stayed in Germany for more than 13 years (Table 2).

Table 2: Number of naturalizations of Iranian nationals, 2000 to 2012

Year	Iranian nationals in Germany	Number of naturalizations	Nationalizations as percentage of Iranian nationals
2000	nn	14,410	
2001	nn	12,020	
2002	nn	13,026	
2003	nn	9,440	
2004	65,187	6,362	9.8
2005	61,792	4,482	7.3
2006	58,707	3,662	6.2
2007	56,178	3,121	5.6
2008	54,371	2,734	5.0
2009	52,132	2,915	5.6
2010	51,885	3,046	5.9
2011	53,920	2,725	5.1
2012	57,275	2,463	4.3

Source: Based on data from Bundesamt für Migration und Flüchtlinge, Ausländerzentralregister (2014)

In the early 21st century (like at the beginning of Iranian migration to Germany) the Iranian Diaspora has been mainly clustered in a few big cities like Berlin and Hamburg, although those coming as refugees have been somewhat dispersed (Shenavari 2009). Different sources report that there were an estimated 100,000 to 120,000 ethnic Iranians (i.e. immigrants from Iran and their descendants) living in Germany in the early 2000s (see, e.g., Köck et al. 2004). With an estimated 25,000 people of Iranian descent, Hamburg is the centre of this diaspora; this is made apparent by the numerous Iranian restaurants, Iranian cultural centres, and mosques, which are mainly frequented by Iranians in Hamburg (Shenavari 2009).

In 2012, the age structure of the diaspora was balanced with 2,552 children below 10, 4,195 youth between 10 and 20 years, and 4,961 persons older than 65 (i.e. retirement age). The average age was almost 40; 4,704 of the 57,275 Iranians living in Germany were married to Germans; and 5.4% had been born in the country (Ausländerzentralregister 2013). In the same year, 17,646 Iranians were granted a permanent residence permit. 7,177 received a

temporary residence permit for reasons of family reunification, 9,023 for humanitarian reasons and 1,203 for employment purposes; about one-third of all of these were female.

For several decades, Iran has suffered from a substantial drain of highly-skilled people. During the 1990s, Iran lost an estimated 15% of its highly educated population; 150,000 Iranians were leaving the country every year and around 25% of all Iranians with a post-secondary education were living in OECD countries at that time (Carrington and Detragiache 1998 and 1999). Between 2009 and 2013, net migration from Iran amounted to around 300,000 (World Bank 2014). Iran thus is within the top of the list of countries losing their academic elite, with an annual loss of 150,000 to 180,000 specialists. Iran's "brain export" is for other countries a "brain import". Most of Iran's international out-migrants move to the United States, where 283,225 Iranians were living in 2012 (World Bank 2014).[4]

3. Iranian students in Germany

Our study focuses on international students, i.e. those who have moved to Germany specifically for higher education. Second-generation Iranians studying at German universities are included to the extent as they are comprised in official statistics.

Of the 51,549 Iranians who studied abroad in 2012, 2,757 did so in Germany; with this number, Germany is at rank 7 in the list of host countries (see Table 3). At the top ranks are Malaysia with 9,311 students and the US with 6,763 students. Between 2009 and 2013 the number of Iranians studying in the U.S. increased by 25% (Institute of International Education 2014). Most of them will likely not return to Iran. According to a survey conducted by the

[4] For a deeper analysis see Chaichian (2012).

National Science Foundation, 89% of Iranian PhD students remain in the US after their graduation, which was the highest percentage of all the nationalities included in the survey.

Table 3: Iranian international students, 2012

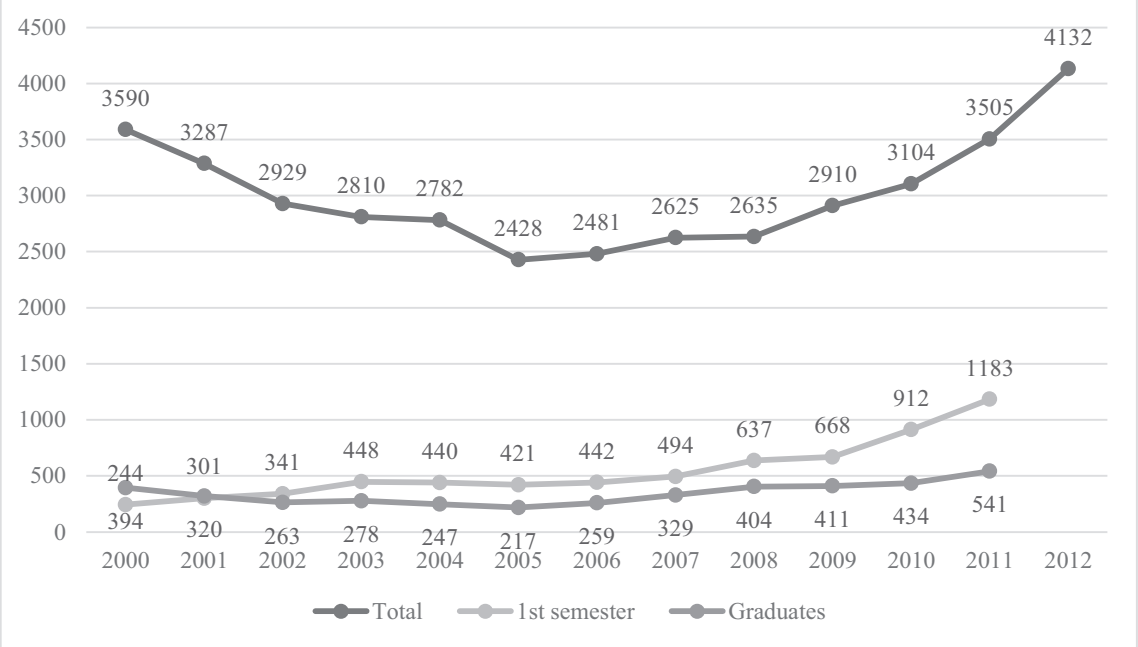
Country	Number	% of total
Malaysia	9,311	18.1
United States	6,763	13.1
United Kingdom	3,372	6.5
UAE	3,204	6.2
Italy	2,975	5.8
Canada	2,805	5.4
Germany	2,757	5.3
Australia	2,452	4.8
Sweden	2,440	4.7
India	2,131	4.1
Total number of international Iranian students	51,549	74.1

Source: Based on data from UNESCO (2014)

Since the 1990s, the number of Iranians entering German institutions of higher education has steadily increased (see Fig. 2). Among the Iranian students who entered in the winter semester of 2009, 1,284 were educational natives, i.e. they had finished secondary school in Germany. (Federal Statistical Office of Germany 2009).

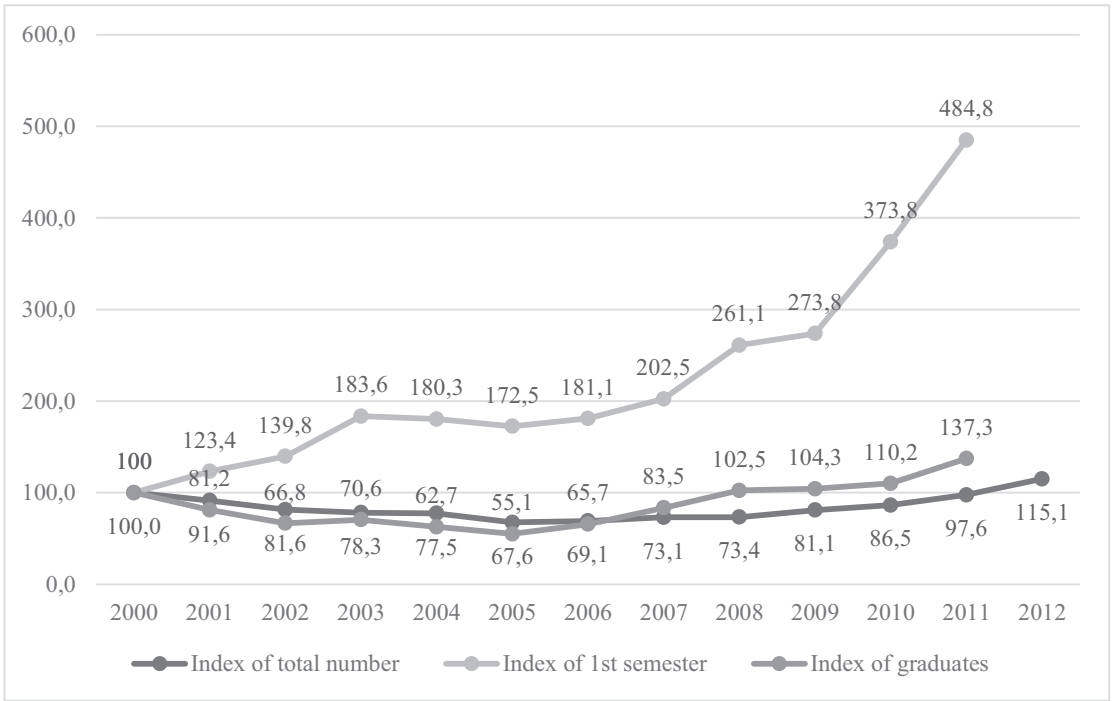
37% of Iranian students in the winter semester 2009/2010 studied engineering, a share which was 13.5 percentage points higher than that of all foreign students in Germany. Mathematics and natural sciences were their second most chosen field, with 27.5%. 8.8% were in medicine and 2.8% in arts (Table 4). Although law, economics, and social sciences are the subjects most popular among foreign students in Germany (with almost 30%), only 14.6% of Iranian students chose these areas in 2009.

Fig. 2a: Iranian students in Germany, 1999 to 2012



Source: Based on data from Federal Statistical Office of Germany (2013)

Fig. 2b: Iranian students in Germany, 1999 to 2012 (Index = Year 2000)



Source: Based on data from Federal Statistical Office of Germany (2013)

The share of Iranians among the total population of foreign students remained stable during the early 2000s, and was 1.8% in 2009 (Federal Statistical Office of Germany, 2011).

Table 4: Iranian students in Germany in winter term 2012/13

Foreign students	6117
International students	4928
Internat. as % of total	80,6
Language & cultural sciences	530
Law, economic & social sciences	870
Mathematics, natural sciences	1668
Engineering	2238
Human medicine	397
Arts	208

Source: Based on data fromBundesamt für Migration und Flüchtlinge (2013)

The number of Iranian graduates who started a professional job in Germany – a job that corresponded to their level and field of study - continuously increased between 2006 (29) and 2011 (169) although it dropped slightly in 2012 (162) (Table 5).

Table 5: Graduates transferred to appropriate employment

2006	2007	2008	2009	2010	2011	2012
29	76	90	92	125	169	162

Source: Based on data from Bundesamt für Migration und Flüchtlinge (2013)

4. Methodology

To learn about the return plans of Iranian students in Germany within the context of their personal characteristics and situation, we conducted an online survey in April 2010. The focus was on persons who had moved from Iran to Germany between 2004 and 2010 with a student visa. The participants were selected by snowball sampling. 43 completed online questionnaires were collected. The questionnaire contained 35 questions divided into three parts:

The first part contained eleven questions concerning the personal characteristics of the interviewees, including age, gender, marital status, previous place of residence, last educational degree awarded before leaving Iran, reasons for choosing Germany as the destination country, and year of entering Germany. The second part posed eleven questions regarding the educational profile of the respondents, including the fields of study in Germany and Iran and the study language. The focus of the third part was on the mobility plans of the respondents, specifically in the context of their current situation. The main question asked whether the respondent intends to return to Iran after graduation, to remain in Germany, or to proceed to a third country. Further, the respondents were asked for their reasons to return or not return to their country of origin. To get a better understanding of the respondents' motivations to return, they were finally questioned about their language skills, the number of friends in Germany, and whether they experience feelings of loneliness.

The collected data was processed by descriptive statistical analysis with the help of the software package SPSS.

5. Survey results

5.1 Personal characteristics and educational background

Most of the respondents had entered Germany in 2007 (ten persons), followed by a count of nine in 2009. In 2006 and 2008 there were seven each year. Five had arrived in 2004 and another five in 2005. 16 of the interviewees were male and 27 female; 67% were single. Their ages ranged from 23 to 33 years, with an average of about 28. The respondents had left Iran at an average age of 24.5 years. 32 of them came from Tehran and 11 from other cities. At the

time of the survey, four respondents had just recently graduated and were about to enter employment; one had become a housewife[5].

60% of the interviewees had left Iran with a bachelor and 30% with a master degree. The rest had acquired a high school degree. 41% of those who had arrived in Germany with a university degree had studied sciences; 28% engineering; 16% law, economics or social sciences; and 3% medicine (Table 6). After entering Germany, 63% continued their studies in the same subject as before. 56% began their studies in English, 40% in German, and 4% in a combination of both languages.

Table 6: Subject of the last degree awarded before moving from Iran to Germany

Field of the last study	Number of persons	Percentage
Science	16	41
Engineering	11	28
Management and Business	5	13
Social Sciences	3	8
Law	2	5
Economics	1	3
Medicine	1	3

Source: Authors' survey

The majority of the respondents (70%) declared to have chosen Germany for further studies because of the relatively low costs; most universities in Germany are public and tuition is either free or moderate compared to universities in other countries with similar qualities of higher education. The second most cited reason (more than 60%) for choosing Germany was the availability of a high quality of education, while other less cited reasons included having relatives in Germany, having learned German previously, and having friends in Germany (Table 7).

[5] We left these persons in the sample because they had been students until recently and provided relevant information in this context.

Significant differences between male and female interviewees were particularly observed in the importance of the costs and quality of education and the role of relatives in Germany. Having family in Germany was important for 18% of the females, but for only 7% of males. 9% of the females and 3% of the male respondents declared that having German language skills was an important factor in their decision-making. While men expressed a higher priority for educational quality, women gave higher weight to having relatives in the country: 63 % of women and just 14% of men said having family members in Germany is important for them.

Table 7: Reasons for choosing Germany as the destination country (multiple answers)

Friends in Germany	All respondents (%)	Male (no.)	Female (no)
1. Low costs of education	36.4	40	31
2. Educational quality	30.7	43	22
3. German language skills	8.0	3	9
4. Having relatives in Germany	15.9	7	18
5. Having friends in Germany	1.1	0	2
6. Other reasons	8.0	7	8

Source: Authors' survey

When asked if they would like to have German nationality, 48% answered "yes," 50% said "no" and 2% had already obtained German nationality at the time of the survey. The answers to this question further revealed significant gender differences: 56% of females but only 36% of males were interested in acquiring German nationality.

5.2 Return plans of Iranian students

This section categorizes the respondents' answers to the question, "Do you want to return to Iran?" based on their personal characteristics and

educational background. The answers were partly analysed from a gender perspective.

A vast majority, i.e. 30 out of the 43 respondents, expressed that they do not intend to return to Iran after having completed their studies; this was so for 74% of females and 62.5% of males. Those who did not want to return were asked for the reason behind their decision. The answers were significantly gender-biased. Most of the women (85%) emphasized social reasons, while the economic and political situation in Iran was less important to them (65%). In contrast, the most frequent reasons cited by the men were the country's economic situation (90%) and the social and political situation in Iran (80%). Half of the males cited that their personal situation was another reason for not wanting to return, while only 30% of females mentioned this.

However, the decision to not return to Iran did not necessarily imply that the respondents were interested to stay in Germany after their graduation. Almost all of the male respondents (90%) who did not want to return to Iran stated they did not want to stay in Germany either. These students rather considered their studies in Germany as a pathway toward future residence in a third country, which in 47% of the cases was the United States. Interestingly, most of the females who did not want to return to Iran had different plans for their future: 78% of them intended to stay in Germany after their graduation.

More than half of those who did not want to return had not been sure of their plans before leaving Iran (60% of the males and 50% of the females); only 28% had made this decision before moving to Germany. The situation was significantly different among those who planned to return: most of the females (85%) but only a minor share of the males (25%) had made their decision before coming to Germany (Table 8).

Table 9 shows the return plans of the respondents categorized by their area of specialization. 50% of those who intended to return to Iran were studying

engineering. This share was 30% among those who planned to move to a third country, but only 5.8% for those who wanted to stay in Germany, despite the fact that engineering is a highly sought-after skill in the German labour market. 41% of the students who intended to stay in Germany were enrolled in law, economics and social sciences, and another 41% in mathematics and natural sciences.

Table 8: Return plans of the sample group prior to entering Germany

	Initial plans	**Actual decision**			
		Do not want to return to Iran		Want to return to Iran	
Initial decision		male	female	male	female
	Stay in Germany	20	33	0	14
	Return to Iran	20	17	33	86
	Not sure	60	50	67	0

Source: Authors' survey

Table 9: Return plans of the respondents according to their area of specialization (%)

	Architecture	Art and Fine Art	Engineering	Language and Cultural sciences	Law, Economics and Social sciences	Management	Mathematic and Natural sciences	Medicine
Return to Iran	0.0	0.0	50.0	8.3	16.7	0.0	25.0	0
Move to a third country	7.7	7.7	30.8	0.0	7.7	0.0	38.5	7.7
Stay in Germany	11.8	0.0	5.9	0.0	41.0	0.0	41.2	0

Source: Authors' survey

One's employment situation and the presence of family in Germany were major reasons for respondents to remain in the country. All of those who had a regular job in Germany wanted to stay. Among those who did not intend to return to Iran, 10% of the men and 55% of the women had relatives in Germany.

All the females but only 16.6% of the males who want to return to Iran after their studies have relatives in Germany. At the same time (as shown

previously), 21.5% of the females cited that "Having relatives and family members in Germany" was a reason for choosing Germany as their place of studies. These results suggest that having relatives in Germany is, for women, both a reason for moving to Germany as well as a potential reason for choosing to leave the country, or at least not a reason to stay. This seemingly paradoxical outcome might be explained by the fact that female students often do not gain an anticipated level of freedom when living with family members in Germany, as mentioned by some respondents. Experiencing such a lack of freedom while living with their relatives may motivate them to return to Iran. Another reason to move back might be the student's financial dependency on his or her family.

The number of German friends a student has can serve as an indicator for the extent of his or her integration as well as his or her return intentions.[6] Table 10 shows the respondents' friendship status with Germans, differentiated according to their return plans. Respondents were asked to answer based on the strength of their feelings; the options were thus qualitative and the answers were to be filled in a table along a Likert scale.

Table 10: Return intentions and the number of German friends (% of total)

German friends	Do not want to return to Iran		Want to return to Iran	
	Male	Female	Male	Female
None at all	40	23	33	57
Few	30	32	17	0
Average number	10	27	50	14
Considerable number	10	18	0	14
Very many	10	0	0	14

Source: Authors' survey

The share of respondents who felt they had many German friends did not exceed 14% in any of the groups. Not surprisingly, the majority (57%) of the

[6] In the survey, friends of the respondents who possessed Iranian as well as German citizenship were not considered Germans (or "German friends").

females who wanted to return to Iran did not have a single German friend, which was significantly more than among the men with the same intention (33%). In contrast, only 23% of the women but 40% of the men who were unwilling to return did not have a single German friend, demonstrating that this group had integrated better than their counterparts; nevertheless, the link between integration status and return plans was more pronounced among females than among males.

Those planning to return to Iran were significantly less sensitive to the "friends factor": 40% of those not wanting to return and 33% of those intending to return have no German friends at all. This small difference of 7 percentage points might be explained by the fact that most of the males who do not want to return to Iran do not intend to stay in Germany either.

We also studied the relationship between return plans and integration by using "feelings of loneliness" as an indicator such that answers were given on a Likert scale. Although feelings of loneliness were widespread among the entire sample group, significant gender differences persisted: the share of those feeling "considerably" or "very lonely" was higher among women than among men, both in the group of those wanting to return as well as of those not wanting to return. As expected, those who did not plan to return felt less lonely than those who did (Table 11). 20% of the male and 14% of the female respondents unwilling to return did not feel lonely at all in Germany, while none of those planning to return cited "no loneliness". 17% of the women and 43% of the men intending to return felt "considerably" or "very lonely"; this occurrence was only 10% for men and 23% for women not intending to return. Surprisingly, 10% of the males and 23% of the females who did not want to return to Iran admitted feeling "very lonely" in Germany.

Table 11: Return plans and feelings of loneliness (%)

Feeling lonely	Do not want to return to Iran				Want to return to Iran		
	Male	Female	All		Male	Female	All
Not at all	20	14	17		0	0	0
Little	50	32	41		50	43	46.5
Average	20	32	26		33	14	23.5
Considerably	0	0	0		17	43	30
Very much	10	22	16		0	0	0

Source: Authors' survey

As mentioned before, 68% of the respondents declared that the quality of education in Germany had a decisive influence on their decision to move to there. Still, as Table 12 shows, there was no significant relationship between satisfaction with the perceived quality of education and students' return plans. 73% of all respondents rated the quality of education higher than 80%. 14% of the female respondents and none of the males intending to return were completely dissatisfied. Nobody was dissatisfied in the group of those not wanting to return.

Table 12: Return intensions and education satisfaction (%)

Satisfaction with educational quality	All respondents	Do not want to return		Want to return	
		male	female	male	female
Not at all	2.2	0	0	0	14
Moderate	8.8	10	14	0	0
Average	15.5	0	23	0	29
considerably	40.0	50	32	67	29
Very much	33.3	40	32	33	29

Source: Authors' survey

Language competence was another factor expected to have a significant influence on students' intention to stay in Germany following graduation. As mentioned before, more than half of the respondents began their studies in Germany in the English language. Table 13 compares the respondents'

current language skills with those they had before leaving Iran. 29 and 11 respondents assessed their pre-arrival German language competencies as weak and average, respectively; only one claimed to have had perfect skills. Not surprisingly, the respondents' skills improved over their stay in Germany. At the time of the interview, 10 and 20 persons claimed to have perfect and good German skills, respectively; 24 of these 30 persons did not want to return to Iran. All in all, the survey did not reveal any striking relationship between German language skills and return intentions.

Table 13: Return intensions and language skills (%)

	Do not want to return to Iran				Want to return to Iran			
	German skills before leaving Iran	Current German skills	English skills before leaving Iran	Current English skills	German skills before leaving Iran	Current German skills	English skill before leaving Iran	Current English skills
Perfect	0.0	21.9	28.1	34.4	7.7	30.8	15.4	23.1
Good	12.5	53.1	46.9	34.4	0.0	23.1	38.5	30.8
Average	18.7	18.7	25.0	28.1	38.5	38.5	30.8	38.5
Weak	68.7	6.2	0.0	3.1	53.8	7.7	15.4	7.7

Source: Authors' survey

Overall, the respondents had better skills in English than in German. However, students' English competences did not improve as much as their German skills after their arrival in Germany.

6. Conclusions

Many Iranians are attracted to Germany for higher education due to a favourable combination of high quality education and low study fees. Having relatives in Germany is additionally an important determinant, especially for

females. Iranian students' enthusiasm to study in Germany is further driven by the social, economic, and political conditions in their home country. These conditions also influence a large share of them to not return home after graduation. However, this does not necessarily imply that these students will stay in Germany after their graduation. Many of them (especially men) intend to move on to another destination, in most cases the U.S. This means that to a large extent, Germany and Iran are subsidizing the educational costs of human capital that is ultimately employed in the U.S.

Our investigation reveals that men prefer to move to the U.S. because they are more concerned with economic opportunities, while women, in contrast, base their decisions more on social security, which they find better in Germany. At the same time our results demonstrate that those who find professional employment in Germany - women as well as men - do not intend to move on to another country. Hence, supporting the process of finding a suitable job in Germany would help to retain highly-qualified Iranian students in Germany. Our results also suggest that supporting Iranian students' integration into German society would also help to keep them from leaving the country after their graduation: respondents without German friends are more inclined to return to Iran than those with German friends, especially among females. The survey results also showed that there is a close relationship between satisfaction with study conditions in Germany and students' post-graduation return plans: those who are less satisfied are more inclined to leave Germany. It is worthwhile for Germany to take note of the trends we have presented in this study because Iranians typically study subjects that are in high demand in the nation's labour market and obtain qualifications that have been regarded as essential for Germany's continued economic development.

Annex

Table A1: Migration between Germany and Iran, 1991-2012

	To Germany	Out of Germany
1991	8143	4769
1992	5842	4051
1993	5942	4069
1994	6585	3868
1995	6846	3640
1996	7815	3715
1997	6300	3973
1998	5547	3997
1999	5968	3719
2000	7629	3738
2001	6684	4056
2002	6089	3767
2003	4899	3402
2004	4138	3497
2005	3379	2792
2006	3085	2636
2007	2890	2361
2008	3374	3330
2009	4092	3745
2010	5791	3049
2011	7213	2533
2012	8224	2695

Source: Based on data from Bundesamt für Migration und Flüchtlinge (2013).

Chapter 7: Students from Pakistan

Social relations and human capital formation of Pakistani students in Germany

Sadaf Mahmood & Beatrice Knerr

Abstract

Since the early 2000s an increasing number enrolments of Pakistani students in foreign universities has been observed. German universities are among those preferred because of their reputation for advanced research, superior campus facilities and low tuition fees. This paper explores the situation of Pakistani students and especially the problems they face in Germany and how they cope with these difficulties while developing their human capital. For this purpose, a questionnaire-based survey was conducted at different universities and the results were analysed via descriptive statistics. The results reveal that their stay in Germany considerably contributes to the progression of their educational development. However, a lack of German language competences is an obstacle to their adjustment, and therefore, when looking for a job after graduation most of them decide to return to Pakistan or move on to an English-speaking country.

Keywords: human capital, Pakistani students, social relations, migration

1. Introduction

Education is the basis for human capital formation and thus for national growth and development (Faridi *et al*. 2009). It can also enhance communication with the international community and competitiveness in international markets. Education is therefore essential for the economic development of countries.

Often the skills and experiences that are transferred between persons and from one generation to the next through teaching and training produce a

"replication" effect in which old skills persist and socio-economic situations remain unchanged. Yet it is countries that are well-equipped with modern skills and knowledge that are able to compete in the international labour market and benefit from the opportunities created by globalization (Kazmi 2005). For many young people in economically less-developed countries, studying in a higher income country appears as a "golden path" to acquiring the valuable human capital needed in order to attain well-paid employment in the host country or another industrialized country following graduation.

Pakistan is among the countries from which large numbers of students can be found at universities all over the globe. They are supported by their own means, by their families, by the Pakistani government, by the host country's government or by international institutions. Being successful in their studies requires not only basic knowledge and diligence but also considerable adaptation to the language and social environment of the host nation. Our paper empirically explores these issues by considering the situations and perspectives of Pakistani students in Germany, one of the major host countries of Pakistanis. In this context it is essential to take into account both their assimilation into German society as well as their integration into their study programmes. To this end, the following indicators were used to determine the extent of integration: academic performance, German language competency, feeling of freedom to practise the own religion, availability of halal food, frequency of contact with their families in Pakistan, and participation in social gatherings with Germans and fellow Pakistani nationals.

This paper focuses on students' personal characteristics, academic performance, and future plans. It seeks to identify various aspects of social integration into German society. The rest of the article is structured as follows: The next section (2) gives an overview of Pakistan's education

system and the typical educational formation of its population. Section (3) illustrates the presence of Pakistani students in the context of international higher education. Section (4) presents the composition of Pakistani students in Germany and the reasons for their interest in Germany. Section (5) explains the methodology of our survey and data analysis, and section (6) shows the results. The last section (7) offers conclusions and presents some policy recommendations.

2. Education in Pakistan

Pakistan has a total population of around 188 million, and therefore, 2.61% of the world population; it grows by almost 2% p.a. and 68% are under the age of 30 (Economic survey of Pakistan, 2014).

In 2002, Pakistan signed onto the UNESCO "Education for All (EFA)" Programme and thereby committed itself to achieve 100% enrolment in primary education by 2015. Public education in the country is free and compulsory up to grade ten for every child aged 5 to 16 years. Boys and girls have equal legal rights to enrolment in schools, colleges and universities (Government of Pakistan, 2008).

In total 4.1 million are enrolled in schools, colleges and universities (Economic survey of Pakistan, 2014). In 2011, primary school enrolment in Pakistan reached 72% while it had been just 58% the year before; male and female enrolment was at 79% and 65%, respectively (UNESCO, 2012). In total, 58% completed their ten years of public education in fiscal year 2011-12; 70% and 47% of the potential males and females, respectively, completed that year (PSLM, 2013).

In 2012, the country had 135 universities, 74 of them public and 61 of them private (HEC, 2012). In 2005-06, just over 424,000 students were enrolled in

the country's universities, but by 2011-12, this number had risen to nearly 1,320,000 (Economic survey of Pakistan, 2014). The ratio of female to male tertiary enrolment was 95:100 in 2012 (World Bank, 2014).

3. Overseas Pakistani Students

Many Pakistani students go abroad each year to attain higher education. Table 1 shows the major host countries for Pakistani international students; they include the United Kingdom, the United States, Australia and two Arab states. In 2012, a total of 37,962 Pakistani students were enrolled in foreign institutions (UNESCO, 2014).

The Pakistani government's Higher Education Commission (HEC) is the organization that deals with overseas Pakistani students and the facilitation of their studies abroad. The Commission also oversees domestic universities and encourages them to play a vital role in the country's development by enhancing its human capital. At the same time, the commission recognizes that the transfer of knowledge from abroad is necessary for the improvement of the country's industrial, agricultural and service sectors. For that purpose the HEC has established a broad network with the international academic community and provides scholarships for excellent Pakistani students to enable them to continue their education at distinguished universities abroad. In 2003, the HEC launched 21 overseas scholarship schemes for MS and PhD level candidates. The HEC prefers sending its students to countries that charge lower tuitions like Germany, Austria, France, or Sweden. Nevertheless, a significant number of scholars have also been sent by the HEC to countries with higher tuition fees like the UK, USA, and Australia (HEC, 2012).

International funding organizations - such as the German Academic Exchange Service (DAAD) or the US's Fulbright programme - further support the country's human resource development both financially and through their organization of academic exchanges.

Table 1: Top ten destination countries of internationally mobile Pakistani students, 2012

Country	No. of students	Share of total (%)
United Kingdom	8,784	23.1
United States	4,455	11.7
Australia	3,762	9.9
United Arab Emirates	3,080	8.1
Saudi Arabia	2,125	5.6
Canada	1,929	5.1
Sweden	1,854	4.9
Malaysia	1,649	4.3
Germany	1,451	3.8
Kyrgyzstan	911	2.4

Source: UNESCO (2014)

Table 2 shows the composition of scholarships awarded by the HEC in 2011. France was the top destination for HEC scholarship holders with 23.7% of the students while Germany was second with 15.6%. The main reason for the choosing European countries is their high standard in teaching, research and technology, which promise a significant enhancement in human capital. A second reason are the relatively low tuition fees compared to other countries with similar academic standards like the USA, UK and Australia. 29.1% of the students enrolled in physics, 29% in engineering and technology, 13.4% in agriculture, 12% in biological and medical sciences, and 10% in social sciences. Those studying in France, Austria, Germany, and Sweden showed a preference for studying engineering and technology or physical sciences, while those in the UK favoured social sciences. As many of these students were supported by the HEC, it is apparent that the HEC awarded a significant

number of scholarships in the fields of physics and engineering; further, they often chose European countries that are less expensive but offer high quality education.

Table 2: HEC scholarships by country and discipline (in %), 2011

Country	Discipline						
	Physics	Engineering and Technology	Agriculture and Veterinary Sciences	Biological and Medical Sciences	Social Sciences	Business Education	Total
France	4.3	8.0	4.5	2.3	2.2	1.9	23.7
Germany	5.0	1.7	2.0	2.2	1.1	0.2	15.6
Austria	7.4	2.6	0.9	1.6	0.7	0.5	13.7
Netherlands	2.6	5.3	1.8	0.9	0.9	0.6	8.8
UK	1.4	1.5	0.7	1.9	2.3	0.5	8.7
Sweden	2.9	1.0	1.0	1.1	0.0	0.0	7.6
New Zealand	1.4	3.0	0.6	0.4	0.6	0.8	6.0
China	1.1	0.2	0.5	0.8	0.2	0.0	4.1
Thailand	0.3	0.1	0.1	0.1	0.4	0.2	2.5
Norway	0.9	1.3	0.9	0.2	0.4	0.1	2.3
Italy	0.9	0.7	0.0	0.0	0.0	0.0	2.2
Australia	0	0.6	0.1	0.3	0.6	0.2	1.8
USA	0.2	0.4	0.0	0.0	0.4	0.1	1.4
South Korea	0.6	1.3	0.0	0.2	0.2	0.0	1.4
Canada	0.1	1.2	0.3	0.0	0.0	0.0	0.3
Total	29.1	28.9	13.4	12	10	5.1	100

Arts and humanities (not shown) accounted for a total of 1.6% of which 0.5% were awarded to France, 0.1% to the Netherlands, 0.6% to New Zealand, and 0.4% to the UK.
Source: Higher Education Commission of Pakistan, 2011

Under the HEC overseas scholarship schemes, a total of 4,986 scholars were financed for their studies abroad between 2003 and 2011 for MS and PhD programmes and post-doctoral research. Out of these, 2,375 have successfully graduated and returned to Pakistan. Others are still pursuing their studies (HEC, 2012). Still a few might not succeed in completing their degrees or do not plan to return to Pakistan after graduation.

The HEC has signed several Memoranda of Understanding (MoUs) with different partner institutions abroad including DAAD (Germany), SFERE (France), NUFFIC (Netherlands), KTH (Sweden), CSC (China), OAED (Austria), and Massey and Auckland Universities (New Zealand) to ease the process of implementing the HEC scholarship schemes; these agreements refer to admissions procedures, monitoring of scholars' performance and the discounting of tuition fees (HEC, 2010-11).

4. Pakistani Students in Germany

Pakistani students are coming to Germany for attaining higher degrees, and for attending different institutions, including universities, colleges, language schools, and vocational schools. Scholarships for higher studies in Germany are mainly offered by HEC and DAAD, which is one of the largest and most respected foreign organizations in its field in Pakistan. A joint MoU has been signed between HEC and DAAD. Many students, lecturers, and researchers have been supported by the DAAD in their efforts to broaden their experiences by visiting Germany. Table 3 shows that since 2003 the number of Pakistani students in Germany has been steadily increasing, and it has more than doubled within ten years. Over the whole period, the share of females constantly was around 11%.

Since 2001, the number of foreign Pakistani students as well as of those who graduated in Germany has increased every year (Table 3).

Table 3: Number of Pakistani students in different categories in Germany

Year	Students [1] (Number)	Educational natives [2] (%)	First year students [3] (Number)	Graduates [4] (Number)	Relation of graduates to first year students (%)	Index of student numbers, 2003=100
2001	653	16.9	242	32	13.2	n.a.
2002	762	n.a.	n.a.	60	n.a.	n.a.
2003	951	15.0	367	69	18.8	100
2004	1,163	13.5	340	109	32.1	122
2005	1,239	11.5	349	128	36.7	130
2006	1,277	10.9	341	188	55.1	134
2007	1,298	10.7	402	212	52.7	136
2008	1,318	10.5	444	217	48.9	138
2009	1,469	11.5	447	239	53.5	154
2010	1,610	12.2	570	263	46.1	169
2011	1,844	12.5	725	322	44.4	193
2012	2,141	11.9	n.a.	n.a.	n.a.	225

[1] Foreign students include both Pakistani nationals who gained their higher education entrance qualification at a German school as well as those who gained it at a foreign, including a Pakistani, school.
[2] Educational natives are foreign students who gained their higher education entrance qualification at a school in Germany.
[3] Foreign first year students are those who enrolled in their first academic semester at a higher education institution in Germany.
[4] Foreign graduates are those Pakistani students who successfully completed a course of studies at a higher education institution in Germany and were awarded a degree in a specific subject.
Source: Based on DAAD & HIS-HF 2013 and own calculations

The data in Table 4 demonstrates Pakistani PhD students' strong interest in engineering and technology. With 419 students in the field of electronics, Pakistan is in rank three after China; Pakistan is 4th in information technology, 6th in biology and 9th in chemistry (DAAD & HIS-HF, 2012).

Table 4: Pakistani postgraduate (including masters) students' numbers and ranking among all international students in Germany, according to subjects chosen, 2011

Subjects	Number	%	Rank
Electronics	419	11.97	3
Mechanical and process engineering	123	3.82	5
Info technology	209	7.77	4
Civil engineering	38	3.71	8
Engineering in general	60	7.32	4
Biology	63	4.71	6
Chemistry	50	4.79	9

Source: Based on DAAD & HIS-HF 2012

5. Survey among Pakistani Students

Selection of the respondents

In order to achieve the objectives of this study, we conducted surveys in 2013 and 2014 among Pakistanis who had been studying for at least three months in Germany; they came from five universities in different regions of Germany. A comprehensive questionnaire with open-ended and close-ended questions was formulated in light of the research objectives and used for face-to-face interviews. They were comprised of three parts: the first sought personal information, the second asked about educational achievements and job experiences and the last part concerned language obstacles and integration issues.[1]

The respondents were selected by snowball sampling. 22 students at University of Kassel, 13 at Georg-August-University Goettingen, 7 at Technical University Darmstadt, 6 at Ludwig Maximillian University Munich, and 11 at University of Stuttgart were personally interviewed. The

[1] The student survey was a part of a larger research project, which investigated facts about Pakistanis living in Germany including those who were employed in companies, those who were self-employed, those who were dependents and students.

universities were chosen on the basis of the researchers' personal social contacts and network. The Pakistani Student Associations (PSAs) - well-organized groups that operate in university cities in Germany to support Pakistani students before and after their arrival - helped us to approach the candidates. At each university, we were in contact with a key person who was acquainted with and had some influence within the Pakistani student community. These persons introduced us to local students; their involvement allowed us to gain the trust of other students who provided information without hesitation. Respondents were approached personally to request face-to-face interviews, which were conducted at places with which they were familiar - university buildings, classrooms, offices, student dormitories, cafeterias, or open forum areas. Each interview took 40 to 45 minutes. In total 59 students were interviewed and eight of them were female. The data was analysed using descriptive statistics with the help of the software package Microsoft Excel.

Research Limitations

It was relatively easy to approach the students because our contact persons introduced us to those whom they knew quite well and of whom they were sure would not refuse an interview; this approach might have rendered some degree of bias. Still, it was difficult to fix appointments as the students were usually busy with classes and examinations, and many were occupied with paid jobs as well. Time and financial resources restricted our selection of a sample population, which is not fully representative of the whole Pakistani student community in Germany, and so our results cannot be generalized. Nevertheless, they give useful insight into Pakistani students' experiences with living and studying in Germany as well as concerning their future plans.

6. Results

Personal characteristics

Table 5 shows the basic personal information of the interviewed Pakistani students. The majority (86.4%) were male, consistent with the statistics of the DAAD report, which showed that the share of males in the Pakistani student community in Germany was 88.6%. All the respondents had come to Germany on a student visa, except for two females who had arrived with family reunion visas and began their studies later on. 52.5% of them were between 24 and 29, and 32.2% were between 30 and 35 years old, i.e. the vast majority were in the 23 to 35 age group. Almost all (96.6%) considered themselves Muslims, which mirrored the fact that about 96% of Pakistan's total population are Muslim. 32.2% were married although only 11.8% were living with their family in Germany. 17% arrived in Germany less than a year prior to the survey while nearly 70% had been in Germany for 1-5 years and 13.5% had stayed longer than six years.

Table 5: Personal Characteristics of the Respondents

Demographic Characteristics		Frequency	Percentage
Gender	Male	51	86.4
	Female	8	13.5
Visa type	Student	57	96.6
	Family reunion	2	3.4
Age	18-23	3	5.0
	24-29	31	52.5
	30-35	19	32.2
	36-41	4	6.7
	42-47	2	3.4
Marital status	Single	40	67.8
	Married	19	32.2
Living with family	With family	7	11.8
	Alone	52	88.1
Duration of stay	< 1 years	10	16.9
	1-5 years	41	69.5
	6-10 years	8	13.5

Source: Authors' survey

Education

34% of the respondents completed their first degree in Pakistan, 44% with a master and 22% with a M.Phil. or MS degree (Table 6). In Germany, 39% were enrolled in a masters programme and the remaining 60% in PhD studies. Almost 40% of the respondents received their funding from Pakistan, mainly from the HEC, and 22% from scholarships through German organizations of which DAAD was the most important (Table 6). 25.4% were supported by their parents; all of them emphasized, however, that they accepted the help of their parents only to begin their studies and to fulfil the necessary formalities like the required blocked account, and afterwards worked part-time or student jobs to secure their living. 8.4% of the respondents started their studies in Germany using their own personal savings and relied on student jobs to carry on. At the time of interview, almost 34% of the respondents were doing part-

time or student jobs to secure their livelihood, and all of these students feared that if they lost their job, they would not be able to continue their studies. The remaining 5% claimed to be living on their savings, although for some - especially female respondents - spouses were supporting them.

84.7% of the respondents achieved their most recent degree in Pakistan while 11.8% had already graduated in Germany and subsequently enrolled in PhD studies; 3.4% attained their previous degree from a third country. 35.6% of the respondents were studying agriculture, 33.9% engineering, 16.8% social sciences, 10% natural sciences, and 3.4% medicine. This corresponds to the statistics of the 2013 HIS-DAAD report, which shows that Pakistani students are largely enrolled in engineering programmes. 21.1% of the respondents rated their academic performance in Germany as very good, 48% as good and 23% as average. Only a few (7.7%) admitted a poor performance.

Learning German

All of the Pakistani students who were interviewed in this survey were enrolled in programmes offered in English. Still, for the few who were receiving a DAAD scholarship it was compulsory to participate in a German language course.

Table 7 shows the respondents' opinions concerning the ease with which foreigners can cope in Germany without knowledge of the German language. Almost half disagreed or strongly disagreed with the statement "it is easy to survive without German language competences", while 23.7% agreed or strongly agreed. This latter group cited that most people in Germany know English, that the language of instruction is English and that they mostly interact with the international community. 44% took German courses in Pakistan. Also, for some study courses, it is necessary to pass the German language examination.

Table 6: Human Capital Formation

Human Capital		Frequency	Percentage
Educational background before coming to Germany	Bachelor[1)]	20	33.9
	Masters[1)]	26	44.0
	M.Phil./MS[1)]	13	22.0
Degree enrolled in Germany	Masters	23	38.9
	PhD	36	61.0
Main financial source for studying at the time of admission	Scholarship from Pakistan	23	38.9
	Scholarship from Germany	13	22.0
	Parents' support	15	25.4
	Part-time job	5	8.4
	Others	3	5.0
Field of study	Medicine	2	3.4
	Agriculture	21	35.6
	Natural sciences	6	10.1
	Social sciences	10	16.8
	Engineering	20	33.9
Country of previous degree achieved	Pakistan	50	84.7
	Germany	7	11.8
	Others	2	3.4
Academic performance in Germany	Very good	11	21.1
	Good	25	48.0
	Average	12	23.0
	Bad	4	7.7

1) Graduation is 14 years of education, Masters is 16 years while M.Phil./MS is 18 years of education

Source: Authors' survey

Most of the respondents participated in basic German language courses after their arrival in Germany. 18.6% and 37.3% passed the A1 and A2 level examinations, respectively. 12% reported that they never attended a German language course, but a few had learned some German skills at their workplace (Table 7).

Table 7: Competence in the German language

Statement		Frequency	Percentage
It is easy to survive without German language competences	Strongly agree	2	3.4
	Agree	12	20.3
	Neutral	15	25.4
	Disagree	12	20.3
	Strongly disagree	16	27.1
	No response	2	3.4
Participated in a German language course in Pakistan	Yes	26	44.0
	No	32	54.2
	No response	1	1.7
Participated in German language course in Germany	A1 level	11	18.6
	A2 level	22	37.3
	A3 level	3	5.0
	B1 level	9	15.2
	B2 level	3	5.0
	Higher level	2	3.4
	Not at all	5	8.4
	At workplace	2	3.4
	No response	2	3.4

Source: Authors' survey

Social relations

32.1% of the respondents admitted to feeling lonely in Germany, while 40.6% denied loneliness. The rest were neutral or preferred not to answer, perhaps because they felt the topic too personal. Almost 60% expressed that they would prefer to live together with their family, saying that this would make their activities more efficient. Mostly they missed their wives and children and wished to invite them to Germany to join them. 10% expressed that having their family in Germany was less important to them. Another 10% said that having their family in Germany was not desirable because it would create additional responsibilities, consume considerable time and money and affect their studies negatively. Rather, they prefer to complete their studies as soon as possible and return home. The majority declared that it would be difficult to arrange the visa formalities for their family members to come to Germany.

To learn about the respondents' attachment to their families back home, we asked the frequency with which they communicate with their family members in Pakistan. 30.5% do so daily, some even twice a day since it is cheap and convenient with Skype and other internet-based social networks. 15.2% said they try to talk every two days, and 40.7% communicate twice a week.

Table 8: Students and their families living in their home country

Indicator		Frequency	Percentage
Feeling lonely	Strongly agree	8	13.5
	Agree	11	18.6
	Neutral	14	23.7
	Disagree	12	20.3
	Strongly disagree	12	20.3
	No response	2	3.4
Living with family	Most important	35	59.3
	Important	3	5.1
	Neutral	8	13.5
	Less important	6	10.1
	Not important at all	6	10.1
	No response	1	1.7
Communication with family members at home	Daily	18	30.5
	Every 2 days	9	15.2
	Twice a week	24	40.7
	Twice a month	1	1.7
	Once a month	1	1.7
	Others	5	8.4
	No response	1	1.7

Source: Authors' survey

Well-being in Germany

As people who largely follow the Islam tradition, Pakistanis are religiously bound to eat halal food[2] and they generally desire to keep this custom while abroad. Eating only halal food was considered "most important" by 83% of the respondents and "important" by 10%; 1.7% were indifferent and only 3.4% did not care much about the availability of halal food.

[2] The Arabic word for "permitted." Halal is commonly seen as "Halal food" which means food that is permitted under Islamic guidelines as found in the Qu'ran (The Holy Book of Muslims).

Table 9: Indicators of well-being in the destination country

Indicators	Scale	Frequency	Percentage
Availability of halal food	Most important	49	83.0
	Important	6	10.1
	Neutral	1	1.7
	Less important	2	3.4
	Not important at all	0	0
	No response	1	1.7
Ease with which religious practices can be kept	Strongly agree	42	71.2
	Agree	11	18.6
	Neutral	3	5.1
	Disagree	2	3.4
	Strongly disagree	0	0
	No response	1	1.7
Social meetings with Germans	Most important	14	23.7
	Important	23	38.9
	Neutral	16	27.1
	Less important	4	6.8
	Not important at all	1	1.7
	No response	1	1.7

Source: Authors' survey

Overall, the respondents did not face any problems in following their religion in Germany. Almost three-quarters of the respondents (71.2%) strongly agreed and 18.6% agreed that they are able to freely practice their religion in Germany; just 3.4% disagreed.

62.6% said that social meetings with German colleagues, friends and neighbours were important or very important to help them in their integration process. 8.5% considered these as less important or not important at all.

In many cases, respondents expressed that they had experience "culture shock" upon their arrival in Germany, which rendered itself in the forms of psychological stress, loneliness, frustration, anger, confusion and depression; this experience had a negative effect on respondents' private life and study performance. Yet, although they faced difficulties in handling their emotions, they emphasized that there were also positive sides of these challenges, for example, the building up of self-awareness. Communication with their

families in Pakistan played a supportive role in this context. All of the respondents were convinced that they are receiving valuable training in Germany that will contribute to a better future for them and their families. They expect the knowledge and skills they acquire in Germany to provide them with lasting monetary benefits as well as valuable long-term relationships with Germany.

Many students emphasized in their interviews that money was a central concern for them, particularly those who were not on a scholarship. Although these students had supplied the required amount for the block account with the support of their family, they afterwards tried to cover their needs by earning money through part-time jobs, which often had negative implications for their studies. They complained that housing and health insurance were particularly expensive and absorb a major part of their budget. The process of securing a bank statement for their visa extension can also be difficult and psychologically stressful. Part-time jobs like work in factories, restaurants, or cafes require considerable physical strength. Often students work night shifts, which affects their concentration during morning classes and makes participation difficult. All of these circumstances have negative effects on their examination performance.

Future plans

More than half of the respondents (54.2%) wanted to return to Pakistan after the completion of their studies in Germany, a major reason being that many of them have a contract with the HEC that requires them to serve in Pakistan for a few years after their graduation. 18.6% preferred to stay and work in Germany, while 15.2% planned to move to a third country (Table 10).

Table 10: Future plans and reasons for leaving Germany (including undecided respondents)

Future Plans	**Frequency**	**Percentage**
Go back to Pakistan	32	54.2
Work in Germany	11	18.6
Move towards a third country	9	15.2
Other plans/undecided	7	11.8
Total	59	100
Reasons for leaving Germany n=41		
HEC contract	16	39
Relatives	3	7.3
Language problems	4	9.8
Better job opportunities	5	12.2
No specific reasons	13	31.7
Total	41	100

Source: Authors' survey

39% of the respondents want to leave Germany and work in Pakistan after the completion of their studies, because they have signed a surety bond[3] with HEC to serve Pakistan for a few years after completing their studies as they are receiving their funding from this organization. Language problems (for 9.8%) and better job opportunities elsewhere (for 12.2%) were key motives for Pakistani students to migrate towards English-speaking countries. Having relatives living in a third country was important for almost 7%. 32% wants to go back to Pakistan but they do not have any specific reason as they said that Pakistan is their home country and they have to go back to Pakistan without any reason.

[3]A surety bond is a written legal contract according to which a guarantor promises to pay a certain amount to Benefactor if beneficiary fails to fulfill the terms of this contract.

7. Conclusions

Germany is an attractive destination for Pakistani students. The low tuition fees, the reputable educational system, and the high quality of life all contribute to Germany's status as a popular place for studies. The Blue Card, employment opportunities and the Schengen Visa also appeal to young and ambitious students who choose Germany. However, after their arrival in Germany, it is not easy for Pakistani students to adjust to the new environment. They face a number of obstacles like language problems, lack of social integration and "culture shock", all of which affect their social life as well as their studies.

In view of our results, we conclude that it would be supportive if Pakistan's higher education authorities create national and international workshops and consultations for students before they go abroad. Students should be helped to make careful preparations before their arrival; they should gather information about their future study and living place and they should estimate the costs and their means for securing their finances during their studies in Germany. The allowed working hours seem to be sufficient for students. The difficulty rather comes in finding a job, and in this context, language is a considerable constraint. Further, the jobs these students take are not secure. We conclude that those without sufficient funding should be advised against moving to Germany for their studies.

Few universities are offering credits for attending German language course; others should also offer credits to increase the interest of students in learning language. We also conclude that it would be helpful for the Pakistani students if the German authorities would provide more essential information in English. In addition, it could contribute to strengthen the relations between both countries at many levels.

Chapter 8: Highly qualified migrants from China

Human capital, social capital and career development of Chinese in Germany in the framework of bi-lateral economic relationships

Xi Zhao, Liting Ma & Beatrice Knerr

Abstract

The decades since the 1980s have witnessed a significant increase in the number of Chinese in Germany. Mainly these have been students, professional workers and businessmen – all of whom have played a large role in the development of an economic relationship between the two countries. They have contributed to the internationalization of Germany's educational sector and to the country's economic development through their investment in human, financial and social capital; they have additionally contributed to China's economic progress in the form of high-skilled returnees, new business relationships and remittances from Germany. To what extent these migrants benefit Germany and China hinges on their career success, which in turn depends on their personal characteristics as well as on the external circumstances under which they migrate, work and live in Germany. Our research explores how human and social capital influence the personal career development of Chinese people in Germany based on a survey among 74 Chinese students, businessmen and experts living in Germany. The results show that personal characteristics such as gender, marital status, age and day-to-day contact are significantly associated with career plans and the preference to stay in Germany.

Keywords: human capital, social capital, career development, Chinese in Germany

1. Introduction

Since the 1980s, the number of Chinese in Germany has significantly increased. Chinese migrate to Germany to study, work for companies, and open their own businesses. Upon their arrival, these migrants are confronted with the questions of how they might best be able to employ their knowledge and skills, as well as how they might be able to form new social networks –

questions that are essential for their career and personal development path. The research presented in this paper aims to obtain a deeper understanding of the conditions Chinese migrants face and the social processes they undergo in Germany by exploring the following questions: (1) How do social networks contribute to the careers of Chinese students, businessmen and professional experts working in Germany? (2) What is the relationship between their human and social capital on the one hand and their career development on the other hand? (3) What do Chinese migrants bring to Germany and what do they transfer back to China in terms of skills, knowledge and attitudes? (4) Under which conditions do they choose to stay in Germany or go back to China? (5) What could the German government do to retain Chinese talents in the country?

These questions are approached through a literature review and a survey among 50 Chinese students, 20 Chinese experts, and 4 Chinese businessmen staying in Germany. Our results provide deeper insight into Chinese people's experiences of mobility, investment behaviour, trans-nationality and multi-cultural social space constructed by social networks. They contribute to an understanding of the relationships between human capital, social capital and personal development at a trans-national level and may provide useful policy guidance for the German government with regard to the working environment of Chinese in Germany.

Following this introduction, section 2 recalls the history of Chinese immigration to Germany. Section 3 presents the economic relationships between China and Germany, which are framing migratory movements. Section 4 explains the methodology and conditions of our pilot survey, while section 5 presents the results. Finally, in section 6 we draw conclusions and offer some policy recommendations.

2. History of Chinese immigration to Germany

In 1822, Cantonese-speaking seafarers from Guangdong province became the first Chinese to settle in Germany, arriving first in Berlin where they took up a variety of jobs (Gütinger 2004). In 1870, Chinese began working in the ports of Bremen and Hamburg as lubricators, stokers, and coal trimmers on German steamships (Benton 2007). They were followed by students and later by groups of entertainers originating from Shandong and Zhejiang (Gütinger 1998). At the beginning of the 20th century, students constituted the second largest social group of Chinese in Germany, and by the mid-1920s, Chinese had become the fourth largest group of foreign students in the country. In 1933 when the Hitler Regime came to power, many Chinese left Germany; most of them relocated either to Spain or went back to China. In 1935, around 1,800 Chinese were still living in Germany, including more than one thousand students in Berlin, and a few hundred seafarers in Hamburg. By 1939, their number had dropped to 1,138 (Benton 2007). After the Second World War, while Germany was divided into the socialist "German Democratic Republic" (GDR, informally called "East Germany") and the "Federal Republic of Germany"[4] (FRG, informally called "West Germany"), migration of Chinese to Germany took place along two different routes.

After the People's Republic of China (P.R.C) was founded in 1949 and became subsequently recognized by the GDR government, many Chinese traders moved to the East sector of Berlin[5] (then under USSR rule), expecting to have better protection by their home country's government. In 1972, the P.R.C. established diplomatic relations with the GDR and from then onwards, China supplied "East Germany" with skilled workers who were officially

[4] This later became the official name for Germany after the country's reunification in 1989.
[5] At that time, Berlin was divided into four sectors, each of which was under the rule of one of the four Second World War "Allied nations," the United States, Great Britain, France and the USSR.

invited under bilateral agreements; these were in addition to any individual migrants (Gütinger 1998). Under such an agreement, which was signed in 1986, China was supposed to provide 90,000 industrial trainees to the GDR. By the time the Berlin Wall fell in 1989, this agreement had hardly been fulfilled; with Germany's reunification, the West became more attractive to Chinese migrants than the East, and previously arrived as well as new migrants largely chose to settle in the West (Gütinger 1998).

Over the 1960s and 1970s, ethnic Chinese from Great Britain and the Netherlands increasingly migrated to West Germany (Christiansen 2003), although P.R.C. nationals were usually not granted residence permits by FRG authorities. Still, as shown by Van Ziegert (2006), the number of Chinese in Germany rose continuously. With the establishment of diplomatic ties between China and the FRG in 1972, cooperation and exchanges between both countries intensified, especially in the years following the take-off of China's economic reforms and the adoption of the "opening policy" which commenced in 1978; since then, the number of Chinese migrants in Germany has continually risen. Although prior to 1970 there were only about 3,000 Chinese in the FRG, their number had increased to 86,000 Chinese nationals by 2011, not including almost 5,000 Taiwanese passport holders[6] and an additional 10,000 ethnic Chinese who had been naturalized within the previous decade[7]. Considering the additional presence of an unknown number of undocumented migrants in Germany, it has been estimated that over 100,000 Chinese migrants were living in Germany in 2010 (Oblau 2011).

[6] By 31 Dec. 2009, Germany's population included 79,870 PRC nationals and 4,670 Taiwanese passport holders, according to the Federal Office of Statistics in Wiesbaden (Statistisches Bundesamt).
[7] Data from Federal Office of Statistics 2009.

3. Economic relations between China and Germany that have framed migration

3.1 Investment

Direct investment in Germany by Chinese businesses

Following the establishment of diplomatic ties between China and Germany in 1972, the number of Chinese companies in Germany gradually increased (Sohm et al. 2009). A number of state enterprises like the logistics company COSCO, the iron and steel group Baosteel in Hamburg, and the steel trader Minmetals in Düsseldorf - opened their operations in Germany.

Especially since the mid 2000s, Chinese investment in Germany has continuously expanded (see Fig 1) although the number of Chinese companies settled in Germany increased to a much smaller extent (Table 1a and 1b). The amount of turnover expanded half as much as the amount of investment, from 500 billion € in 2000 to 2.1 billion € in 2012 (Table 1a).

Due to the country's high level of technology, legal security, highly-skilled labour force, strong standing on world markets, central location within the European Union (EU), and good economic reputation, Germany has increasingly attracted investments by profit-seeking Chinese companies (Sohm et al. 2009). Especially due to Germany's status as the EU's strongest economy and largest market and its reputation for high-quality products, the nation hosts nearly half of all Chinese investments in the EU (German Invest and trade 2010).

Table 1a: Chinese companies in Germany: Direct foreign investment, new enterprises and number of employees

Year	Direct foreign investment (Euro billion)	Number of new enterprises	Annual turnover (Euro billion)	Number of employees (in `000)
1989	53	16	0,6	0
1990	70	20	0,3	1
1991	79	21	0,5	0
1992	106	22	0,7	0
1993	144	28	0,9	0
1994	123	31	0,6	0
1995	124	32	1	0
1996	125	32	0,7	0
1997	186	30	0,7	0
1998	148	28	0,8	0
1999	129	36	0,3	0
2000	157	35	0,5	n.a.
2001	177	34	0,5	n.a.
2002	153	19	0,4	n.a.
2003	156	18	0,6	n.a.
2004	191	18	0,6	n.a.
2005	235	17	0,7	n.a.
2006	328	25	0,9	1
2007	444	27	1,3	1
2008	564	33	1,5	3
2009	685	40	1,2	3
2010	907	51	1,8	3
2011	1282	60	2,6	6
2012	1557	62	2,1	5

Source: Based on data from Deutsche Bundesbank (2015)

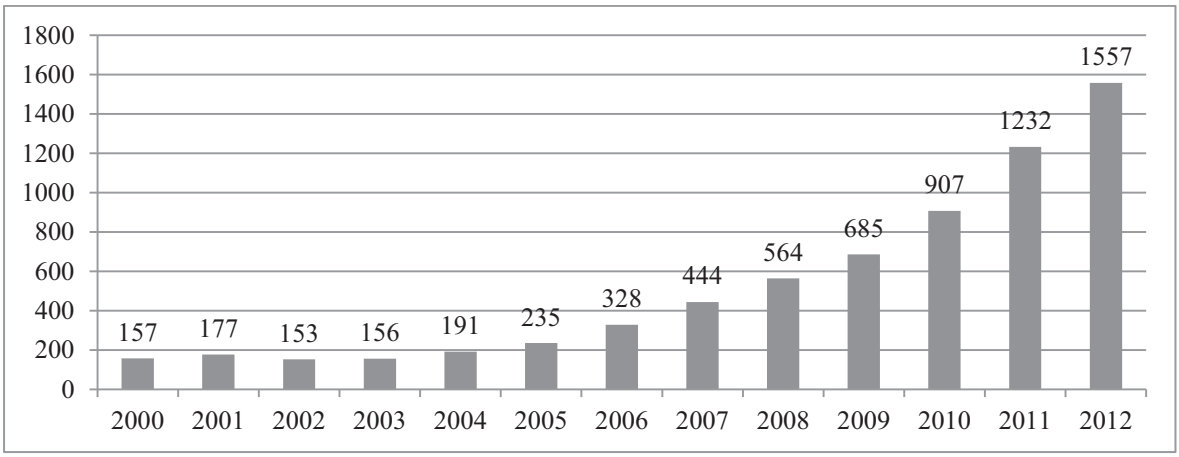
An increasing number of private Chinese companies have started doing business in Germany, such as the telecommunication companies ZTE and Huawei or the appliance manufacturer Haier. In 2011, around 800 Chinese companies were operating in Germany - not including travel agencies and restaurants – and these were mainly in the machinery sector. Between 2000 and 2012 investments by Chinese companies in Germany increased from 157 million to 1,557 million € (Deutsche Bundesbank 2015, Fig. 1).

Table 1b: Chinese companies in Germany: Direct foreign investment, new enterprises and number of employees, 2000 to 2012, indexed with base year 2000

Year	Direct foreign investment	Number of enterprises	Annual turnover
2000	100	100	100
2001	113	97	100
2002	97	54	80
2003	99	51	120
2004	122	51	120
2005	150	49	140
2006	209	71	180
2007	283	77	260
2008	359	94	300
2009	436	114	240
2010	578	146	360
2011	817	171	520
2012	992	177	420

Source: Based on data from Deutsche Bundesbank (2015)

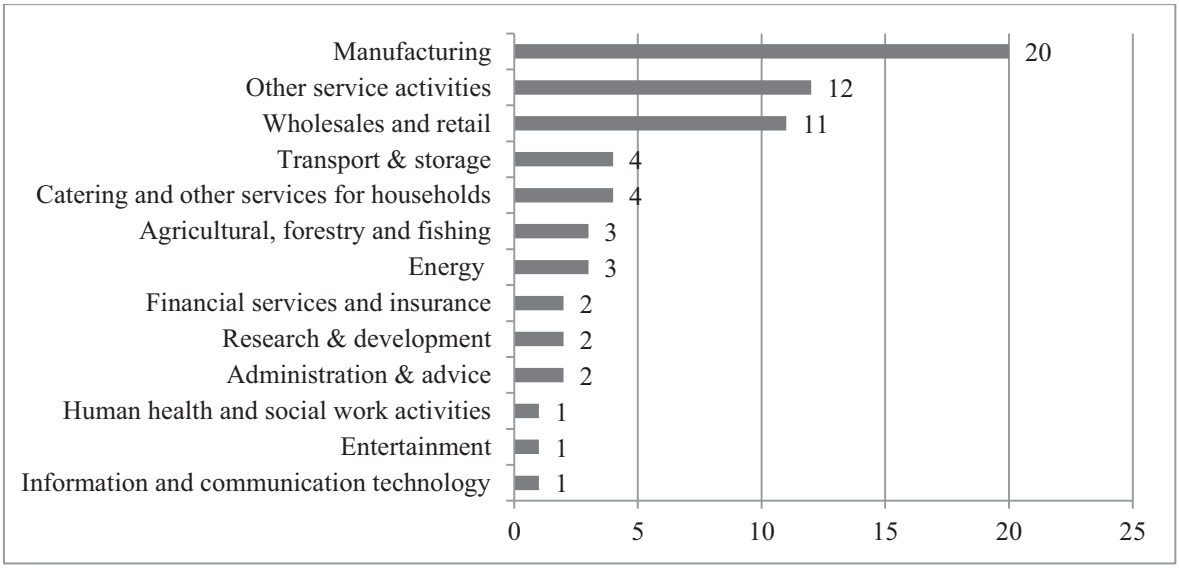
Fig. 1: Investments by Chinese enterprises operating in Germany, 2002 to 2012 (million Euro)



Source: Based on data from German Federal Bank (2014) (Deutsche Bundesbank)

According to a survey by the German Centre for Market Entry (GCME), most of China's FDI in Germany was in the areas of manufacturing, wholesale and retail and services (Fig. 2).

Fig. 2: Sectors of Chinese enterprises in Germany (frequencies)

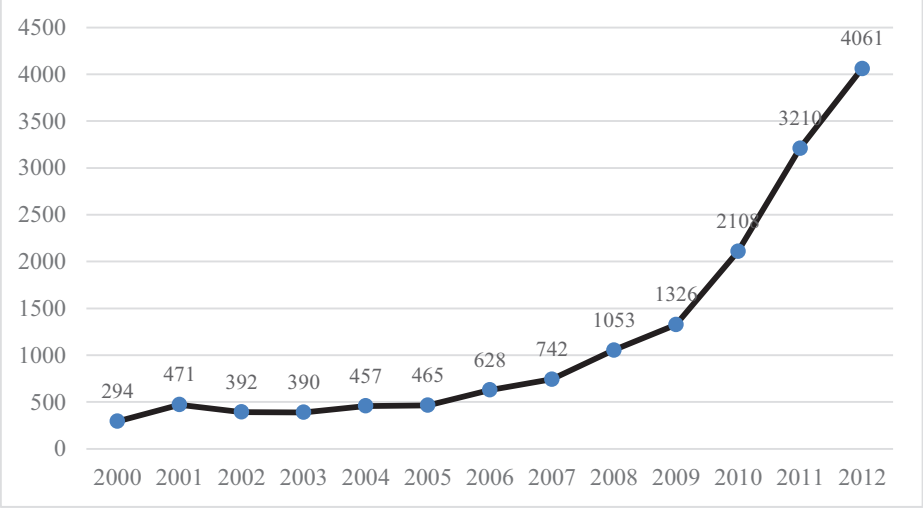


Source: Tripitz et al. 2011

Direct investment in China by German businesses

Since the 1970s, German companies have been engaged in the Chinese market. China has attracted their investments for two main reasons: one is the huge domestic market, which caters to more than one billion potential consumers, promising a virtually endless demand (Sohm et al. 2009). The second reason is the possibility to produce at significantly lower costs than in Germany. Between 2000 and 2012, German investments in China increased from 294 million Euro to 4,061 million Euro (Fig. 3).

Fig. 3: German foreign direct investment in PR China*, million Euro, 2000-2012

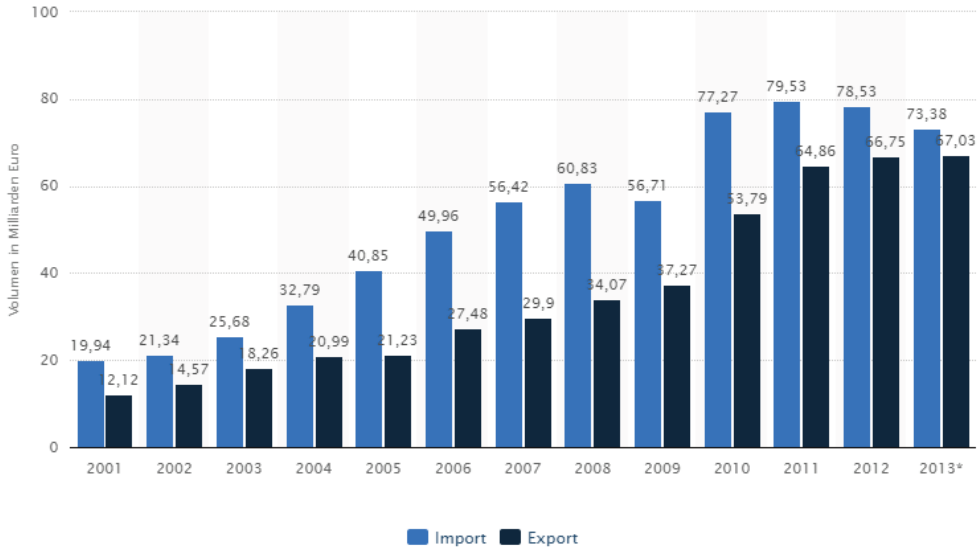


*) Excluding Hong Kong and Macao
Source: based on data from German Federal Bank 2014 (Deutsche Bundesbank)

3.2 Trade

Between 2001 and 2011, Germany's imports from China grew by about the fourfold, and afterwards declined, while Germany's exports to China steadily increased, from 12.12 billion Euro in 2001 to 67.03 billion Euro in 2013 (Fig.4)

Fig. 4: Trade between PR China and Germany, 1994 – 2013[1)] (billion Euro)



[1)]Imports: From China to Germany; Exports: from Germany to China
Source: Based on data from German Federal Bank 2011

4. Chinese nationals in Germany

In 2010, 78,960 nationals from PR China were living in Germany, most of them students, professional experts, and businesspeople. In our research, we investigate these three groups separately with regard to their career development, and further seek to learn how the study experience of those who studied in Germany influenced their decision to stay and work in Germany.

Students

Prior to 1978 when China enacted a number of economic reforms and "opening-up" policies, there were only 20 to 30 Chinese studying in Germany, most of them in the German Democratic Republic (GDR). But during the early 1990s when the Chinese government eased restrictions on studies abroad, an influx of Chinese students moved to the re-unified Germany. Since 2000, Chinese have been the largest group of foreign students in Germany's institutions of higher education; in 2012 their number reached 25,521 (DAAD 2013), accounting for nearly 12.4% of all international students in Germany. In 2008, Germany was the second-most popular destination (after the U.S.) for CSC (China Scholarship Council) scholarship holders; that year, 481 scholarship recipients came to Germany, corresponding to 10% of all CSC scholarships (Hase-Bergen 2009).

In their investigation of the reasons for which Chinese students choose to come to Germany, the German Academic Evaluation Centre (Akademische Prüfstelle - APS) found that the primary reason was that Germany offers a large variety of institutions and programmes at a high academic level; Chinese students can be found today in more than 380 institutions. Secondly, Germany is located in the heart of the European continent and borders nine other nations, thereby offering many opportunities for travel. Thirdly, living costs and tuition fees in particular are relatively low in Germany compared to

countries offering similar academic opportunities. Furthermore, Germany offers good services for international students to facilitate their social and academic inclusion. Finally, cooperation between Chinese and German universities has historically maintained a lively exchange.

A significant share of Chinese students appear to stay in Germany after their graduation. However, there is not reliable data indicating the numbers that have remained in Germany for work, have returned to China, or have moved on to third countries.

Professional experts

With expanding business relations between Germany and China, German companies have the need for more highly-qualified Chinese employees who have studied in Germany. Chinese students in Germany speak Chinese as their mother tongue, are familiar with Chinese culture and have been pre-socialized in Germany. With these characteristics, they are a most valuable asset for transferring knowledge about China to German enterprises. For these German companies who seek to fill positions in China, employing Chinese graduates who have studied in Germany is often seen as more beneficial than employing Germans whose lack of familiarity with the culture may be a barrier.

At the same time, Chinese enterprises seeking to intensify their business operations in the German market are sending an increasing number of Chinese employees to work in Germany. Chinese are the third largest group of foreign labourers in Germany (Federal Office for Migration and Refugees of Germany 2008). In 2007, they accounted for 8.3% of the total foreign labour force, and 34% of them were female.

Businesspeople

The catering sector is a dominant basis for the livelihoods of overseas Chinese; this may be because the costs for establishing a restaurant are comparatively low and the organizational procedures simpler than what is necessary for establishing manufacturing units. Furthermore, high-skilled qualifications are not required to supply ethnic cuisine to customers who dine out, and profits and cash flows are high (Van Ziegert 2006). At the same time, according to the authors' observations, even Chinese with PhD degrees have started restaurants or catering services in Germany as an alternative to continuing in academia or working in their area of specialization. Numerous Chinese restaurants can be found in nearly all major German towns. Another main business sector commonly run by Chinese in Germany is travel agencies. Since China's economic take-off, an increasing number of Chinese tourists are visiting foreign countries, especially European countries for their extensive history and fascinating landscapes. Since the start of China's "open" policy, an increasing number of German tourists have become interested in visiting China, especially via guided tours. Chinese travel agencies in Germany are catering to this new market, but also organize journeys to other Asian countries like Thailand or Laos.

5. Resources for career development: conceptual framework

Capital

In classical economic theory physical capital is one of the three major factors of production, along with land and labour (Ahmad 1991). However, the concept of "capital" has been broadened to other categories, such as "human capital" and "social capital". These terms reflect a wide consensus that nature and society both function in a similar manner: they are important for the production of goods and can be enhanced by human effort.

Human capital

Human capital according to OECD (2001) refers to "the knowledge, skills, competences and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being". It is essential for individual as well as social development. Our study concentrates on the links between human capital and individual career development. For this purpose, the human capital of individuals is measured by their educational level, previous training, and work experiences.

Social capital

In our study, social capital refers to connections within and between social networks, which are categorized into three types:

a) "Bonding social capital" which includes interactions with family, relatives and close friends. In particular, we examine how contact with relations in China influences the respondents' career choices and development paths.

b) "Bridging social capital" which refers to the socially heterogeneous ties connecting people in horizontal associations. We measure it by the individual's involvement in collective organizations, such as universities, commercial associations, or cultural clubs.

c) "Linking social capital" which includes hierarchical links between people and groups in power relations. We measure it mainly by looking at relationships at the workplace as well as with both the Chinese and the German government.

Career development

Career development is "...the lifelong psychological and behavioural processes as well as contextual influences shaping one's career over the life span. As such, career development involves the person's creation of a career pattern, decision-making style, integration of life roles, values expression, and life-role self concepts" (Niles & Harris-Bowlsbey 2002:26). We measure it by career choice and development path. For Chinese students, this applies to how they plan their studies and whether they choose to start a business, find a job in a German organization, or return to China to work. For Chinese businessmen we consider when they came to Germany; how they have earned their living; what kind of career they pursue; what kind of business connections they maintain with China; and where they plan to move in the future. The indicators we focused on include their current work in Germany, their occupation type, and their future mobility plans, referring to the company with which they would like to work and the country in which they would like to stay.

6. Methodology

For exploring the research questions, we mainly used a group discussion, semi-structured interviews, and questionnaires.

Group discussion

In the first stage of the survey, a semi-structured focus group meeting was organised in which six Chinese students of Goettingen University and two Chinese workers based in Goettingen participated. For three hours, the concept of social capital was discussed, and Chinese migrants' bonding, bridging and linking social networks were identified. The participants helped

to formulate the questionnaire and to distribute it to other Chinese in Germany.

Questionnaire

The final questionnaire used for our survey consisted of three parts: the first covering the respondents' personal characteristics; the second their human capital and career plans; and the last part their social capital. The content of the three parts was closely interwoven.

The questionnaires were mainly distributed via internet among the Chinese student community, as the internet offers a convenient channel for sample collection. The internet community also cannot be ignored when considering social networks, 40 online questionnaires were sent to Chinese students at Kassel University and TU Dresden by email and The Microsoft Network (MSN), and 15 were distributed through convenience (non-probability) sampling among 15 Chinese students in Goettingen. By these means, 50 valid questionnaires were collected. We additionally interviewed 20 Chinese workers employed in different companies and organizations and made several in-depth case studies on Chinese businessmen. Our overall survey was implemented mainly in Goettingen, Kassel, Hannover, Frankfurt and Dresden.

The collected data was processed with the software package SPSS through which a descriptive analysis was performed. The results were divided into three parts according to the different groups of respondents: namely Chinese students; Chinese professional experts; and Chinese businesspeople.

Limitations

Due to resource restrictions - particularly with regard to time and finances - the sample size lacks representativeness, and hence our survey takes on the role of a pilot study of 50 students, 20 experts and 4 businessmen. The businessmen were especially difficult to reach because of their scattered spatial distribution and because of their busy schedules at the end of the year when our survey took place. Although we visited ten businessmen, we received just four valid responses. Despite the limitations of this study, however, we believe that the concepts and implementation methods of our project can offer valuable scientific guidance for follow-up research in related fields.

6.2 Chinese students in Germany

Personal Characteristics

Basic information concerning Chinese students' personal background is shown in Table 2. Of the 50 respondents, 34 were females; 43 were 20 to 30 years old; 9 were married, all of them to Chinese partners, and most of them had married after coming to Germany. Before traveling to Germany, the majority of the respondents had lived in Beijing, although they had been born in other places. The rest had lived in Shanghai, Nanjing, Wuhan, Qingdao, and other big cities of China. Most of them had come to Germany for study purposes and only a few initially for work. In China, 42% had been enrolled in law and economics, 12% in language and humanities, and 10% in mathematics and natural sciences. In Germany, 44% were studying law and economics and 12% electronics and information engineering. Those who had studied pure natural sciences in China shifted to applied sciences in Germany, especially to engineering. Most of the respondents received financial support

from their parents; nearly two-thirds (62%) were not funded by a scholarship or grant during their study in Germany.

The level of human capital Chinese students possess prior to their arrival in Germany is represented in their educational background, and is upgraded by their studies and experiences in Germany. As shown in Table 3, most of the respondents (72%) held a bachelor degree and 16% a master degree prior to coming to Germany. The majority studied in German universities towards a masters and 10% towards a bachelor degree. A small portion of students were enrolled in language schools with the intention to pursue higher academic degrees in Germany after their language examination. The rest pursued a PhD. 58% declared to have a "good" academic performance, 36% rated themselves as just average, and only 6% claimed having excellent results.

Most of the respondents stated that they want to return to China after graduation; 26% intended to stay in Germany, and 10% planned to move on to the US (see Table 4). The majority wanted to find a job in a private company, while only a few preferred to open their own business. 14% wished continue their studies with an additional degree, and 18% still had no vision concerning what they would do after graduation. In our survey we found that personal characteristics including gender, age, marital status, and educational background were decisive determinants of students' career choice.

Table 3: Personal characteristics of Chinese students (N=50)

Attribute		Number	Percent
Gender	Male	16	32
	Female	34	68
Age	20~25 years	23	46
	26~30 years	20	40
	31~35 years	7	14
Marital status	Single	41	82
	Married	9	18
Financial source for study	Family in China	27	54
	Family in Germany	2	4
	Working for salary	6	12
	Scholarship/grant	15	30
Level of education prior to arrival in Germany	High school graduate	3	6
	College graduate	3	6
	Bachelor	36	72
	Master	8	16
Degree pursued in Germany	Language course	2	4
	Bachelor	5	10
	Master	34	68
	Doctor	8	16
	Post-doc	1	2
Academic performance in Germany	Excellent	3	6
	Good	29	58
	Average	18	36

Source: Authors' survey

Females were more inclined to stay in Germany than males. In the group discussion, many of them expressed that they would like to stay in Germany because of the well-developed social security system. For example, the German government offers grants for children, which are not available in China. Generally, females turned out to be more concerned about family

issues, for example in their preference for the less gender-discriminating social system in Germany compared to the system they knew in China.

Most of the respondents, however, and especially the older ones, wished to return to China to get a good position. Younger students, and particularly those under 26 years, tended to be more inclined towards moving to the US after graduation compared to the other groups. This group generally appeared to be more interested in going to another country to enrich their life experience and in seeking out better career opportunities in foreign countries; they felt that they had more time for trying different opportunities. All of those who wanted to go to the US were single. The married ones seemed to prefer a more stable life, and mostly planned to return to China.

It was striking that students with better academic performance were more inclined to move to the US or stay in Germany, while most of those with an average score wanted to return to China. Understandably, those with excellent study or work records are more likely to obtain employment in Germany or in the US and are better prepared for the competitiveness faced in the labour markets of economically highly developed countries.

All of the bachelor and most of the PhD students intended to return to China after graduation, while those who planned to move to the US were all studying for their masters. Many from this latter group aimed to pursue a PhD at a US university where they expected better salaries, high academic standards, and more favourable chances for foreign students to become integrated into the labour market after graduation (compared to other foreign countries like Germany).

58% of the respondents who intended to stay in Germany had made that decision due to favourable conditions for their career development. The second most important motivation was the better living conditions (24%). 62% of those planning to return to China declared that the most compelling

motivation to return was the favourable career prospects, especially due to the Chinese government's policy aimed at attracting its nationals back to the country. The second most important factor offered was the need to take care of parents, and the third was their own marriage. Females placed more weight on their marriage plans than males in their decision concerning whether to stay or to return.

Social Capital of Chinese Students in Germany

In the context of bonding social capital the respondents were asked about the frequency with which they are in contact with family members and friends. On a day-to-day basis, most of them interact mainly with other Chinese while just 18% interact regularly with Germans. Table 4 shows that 44% of the respondents had five to ten friends, 24% had less than five friends, 18% had ten to twenty friends, and 2% claimed to have "no friends". The majority said that their friends are mainly from China, and this was independent of how long they had been living in Germany. More than half spent less than eleven hours per week socializing with Germans. This might partly explain why all of the married respondents had Chinese partners (Table 5).

Table 4: Relationship between personal characteristics and plans for mobility after graduation

Personal attributes		Germany	China	U.S. or other English-speaking country
Gender	Male	4	11	1
	Female	9	21	4
Age	20~25	5	14	4
	26~30	5	14	1
	31~40	3	4	0
Marital status	Single	10	26	5
	Married	3	6	0
Academic performance	Excellent	2	1	0
	Good	7	17	5
	Average	4	14	0
Degree pursued in Germany	Language	1	1	0
	Bachelor	0	5	0
	Master	11	18	5
	Doctor	1	7	0
	Post doctor	0	1	0
Total		**13**	**32**	**5**

Source: Authors' survey

Few respondents had family members in Germany; only 12% had family in Europe. 60% contacted their family in China once a week, 28% twice or three times a week, and some every day. Most travelled to China once a year while a quarter of them travelled every two years. When asked why they did not visit their family in China more often, most answered that the high travel costs were prohibitive; also, they preferred to stay in Germany to work during their free time instead of using money for traveling home.

Table 5: Chinese students' friends in Germany

Friend ties	Choice	Number	Percentage
Number of friends*	No friends	1	2
	Less than 5	12	24
	5-10	22	44
	10-20	9	18
	More than 20	6	12
Origin of friends	Chinese	38	76
	Germans	8	16
	People from other countries	4	8

*The definition of friends in this research refers to persons who share their spare time together and help each other.
Source: Authors' survey

No significant relationship was found between the frequency of contacts with family in China and students' future mobility plans. However, as shown in Table 6, those who interacted more with Chinese were more likely to be inclined to return to China, while those who socialized more with Germans were more likely to prefer to stay in Germany. Everyday interactions may therefore influence future career plans; or the converse may be true, namely that those planning to return might focus more on interacting with Chinese, while those intending to stay in Germany might seek out more contact with Germans.

Table 6: Relationship between day-to-day contact and future mobility plans (N=50)

Main contacts on daily basis	**Planned destination after graduation**			
	Germany	China	USA or other English-speaking country	Total
Chinese	7	24	2	33
German	5	3	1	9
Others	1	5	2	8
Total	**13**	**32**	**5**	**50**

Source: Authors' survey

To investigate the indicators for bridging social capital, students were asked about their membership in associations, e.g. sports, religious, social, political, business, or other associations. 22% of them had joined a club or association in Germany; these were mainly members of the Association of Chinese Students and Scholars (ACSS). The majority spent less than 10 hours per week on club activities wherein they were mainly interacting with other Chinese and participated mainly with the intention to make friends. Few were interested in political or religious activities.

Regarding sources of linking social capital, we found that most respondents do not work for pay but instead concentrate on their studies. 22% had a job in the formal sector and 10% in the non-formal sector; they worked mostly in restaurants, travel agencies, and marketing or retail companies. Their major motivation was to earn money, although a second incentive was to integrate into the host society. Some also volunteered for the ACSS.

6.3 Chinese professionals working in Germany

Personal characteristics

Most of the interviewed professionals were between 30 and 50 years old; half of them were male. 30% had already gained German nationality, and 40% possessed permanent residence in Germany. Almost all of the respondents came to Germany in the 1990s or in the early 2000s. They had previously lived in Beijing, Chengdu City and Hangzhou City. 55% came to Germany with a bachelor and 20% with a master or PhD degree. In China, they had previously been students (45%), researchers (30%), government employees (15%) or employees in private companies (10%). 70% of the respondents initially came to Germany for higher education, 20% for work, and 10% to reunite with their family. However, at the time of the interview, 50% were working either in German or Chinese companies in Germany as managers or

regular employees; 40% were working in German academic institutions or for the Chinese government. 50% of the respondents received a monthly post-tax income of 1,500 to 3,000 Euros, 30% earned more than 3,000 Euros and 5% earned less than 1,000 Euros. Total family incomes were such that most of the families (65%) had revenues between 2,500 and 5,000 Euros per month; however, 5% had more than 7,000 Euros, and 5% less than 1,500 Euros. 65% of the respondents were married, half of them with Germans and the other half with Chinese; 25% were single and 10% were divorced. The majority (more than 50%) married in Germany. The married respondents had one or two children. Almost all of these children were boys and lived with their parents in Germany.

The respondents commonly remitted money to relatives and friends in China; almost 90% of the remittances went to parents and 10% to siblings. 55% of interviewees transferred 1,000 to 3,000 Euros p.a. and 20% sent more than 6,000 Euros p.a.. Around 45% of the respondents sent money to China once every six months, usually around the time of big Chinese festivals; 15% transferred money only when their family requested support. 20% never remitted.

Table 7: Personal characteristics of Chinese professional experts (N=20)

Attribute		Number	Percent
Gender	Male	10	50
	Female	10	50
Age	Under 20 years	0	0
	20~25 years	2	10
	26~30 years	3	15
	31~40 years	7	35
	41~50 years	6	30
	Over 50 years	2	10
Nationality	Chinese	6	30
	Chinese (with right to permanent residence)	8	40
	German	6	30
Marital Status	Single	5	25
	Married	13	65
	Divorced	2	10
Educational background before coming to Germany	High school graduate	5	25
	Bachelor	11	50
	Master	2	10
	PhD	2	10

Source: Authors' survey

Similar to the situation for students, female professionals were more inclined to stay in Germany than males due to the country's attractive social security system and policies such as grants for having children. Another reason mentioned a number of times was the experience of less discrimination towards women in Germany. The majority of the married Chinese professionals preferred to stay in Germany either for the superior educational opportunities for their children or because their family is here. Most Chinese professionals with only a bachelor degree preferred to stay in Germany because it would be more difficult for them to find a good job in China where a large number of people with bachelor qualifications are competing in the labour market. Those with study experiences in Germany were more likely to want to stay in Germany provided they can find suitable jobs.

Table 8: Personal characteristics of Chinese experts according to mobility plans

Personal characteristics		Stay in Germany or return to China	
		Germany	China
Gender	Male	5	5
	Female	9	1
Marital Status	Single	4	1
	Married	9	4
	Divorced	1	1
Spouse lives in	China	5	3
	Germany	9	3
Level of education	High school	5	0
	Bachelor	8	3
	Master	0	2
	Doctor	1	1
Former experience	Studies in Germany	12	3
	Work in Germany	2	3
Total		**14**	**6**

Source: Authors' survey

Social capital

In their private life, 80% of the respondents had more contacts with Chinese than with Germans. The situation is contrary in the workplace where 75% interact more with Germans than with Chinese. 85% of the respondents had mostly Chinese friends

The interviewees were in regular contact with their relatives and friends in China, mainly by telephone. Few respondents were regularly in contact with business partners or colleagues in China; those that were only made contact in cases of necessity.

70% of the interviewed professionals were not engaged in any association or club in Germany. Those who were involved were mostly members of Chinese organizations, like the Chinese Students Union, and usually held a position in

the top management or on the board, e.g. as a chairman. They had joined these organizations mainly to make friends, to participate in various recreational activities, to enhance their career development, or to become more engaged in German society.

70% of the professionals had no plans to return to China but instead prefer to stay in Germany where they anticipate a better career development as well as better conditions for the education of their children. Some had chosen to stay because their family lives in Germany. 85% planned to continue working as employees, while 15% wanted to open their own business in the near future. 30% of the respondents had already decided to return home and cited China's investment environment, work opportunities and favourable government policies as incentives to return.

6.4 Chinese businesspeople in Germany

Personal and professional characteristics

In the next part of our study, four Chinese businesspeople who originated from different cities in China (Wenzhou, Wuhan, Qingdao, Yinchuan) were interviewed; they were living in the cities of Kassel, Goettingen, Hanover and Frankfurt. Three were female and all were around 30 years old. Table 8 shows their personal characteristics as well as details concerning their businesses.

Only one of them who had come to Germany in 1996 had already acquired a permanent residence permit in Germany. The other three arrived between 2007 and 2009; they had obtained bachelor degrees in China and their initial motivation for moving to Germany was to study for a masters degree. They came to Germany without professional working experience. Only the one who arrived in 1996 moved to Germany with the intention to open her own business. She had only a high school education and four years of working experience in China.

Two of the interviewees ran Chinese restaurants, while the other two had established travel and cultural exchange companies. Two earned more than 4,000 Euros per month, while the younger two earned 1,500-2,500 Euros. Only one interviewee (from Wenzhou) remitted money to her parents in China, sending between 7,000 and 8,000 Euros once a year. All respondents intended to invest in China after they accumulate enough money in Germany. Three of them have already bought real estate or restaurants in China.

Two respondents were married. Their spouses were native Chinese, but one of them had Dutch nationality. Both families had three children, all of whom lived with their parents in Germany and were highly assimilated into German culture and lifestyle.

Social capital

The four interviewees shared some common habits in their social life. At their homes as well as at their workplaces, they were mainly in contact with other Chinese, and their friends were almost exclusively Chinese. They communicated with their families or friends in China about once a week, and normally they visit China once a year. All of them participated in associations or clubs organized by Chinese, such as the Overseas Chinese Association or the Chinese Business Association. They regularly participated in their activities to support their integration, to enhance their career development, to make friends or just to have fun.

All respondents reported that they encountered some problems in running their business in Germany. Major difficulties were linked to the foreign affairs office (*Auslaenderamt*), the tax department, and the administration for industry and commerce.

Table 8: Personal characteristics of Chinese businessmen

	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4
Sex	Female	Female	Female	Male
Age	40	28	30	29
Education level	High school	Master	Master	Master
Year of arrival in Germany	1996	2007	2007	2009
Home city in China	Wenzhou	Qingdao	Yinchuan	Wuhan
Marital status	Yes	No	Yes	No
Number of children	3	0	3	0
Business sector	Chinese restaurant	Travel agency	Chinese restaurant	Culture company
Monthly income	5,000 Euro	1,500 Euro	4,000 Euro	2,000 Euro
Remittances to China	Yes	No	No	No
Investment in China	Restaurant	No	Real Estate	No
Plan to return to China	No	No	No	Yes

Source: Authors' survey

The three females had no plans to return to China but instead plan to continue running their business in Germany where they a number of living conditions to be superior, namely the education available to their children, the consumption level, and medical care for the elderly. The male interviewee, in contrast, has already decided to return in order to take care of his parents. Furthermore, China's improved investment environment and supportive government policies appear attractive to him.

In order to provide deeper insight, we present two case studies resulting from in-depth interviews with two Chinese businesswomen living in Germany.

Case 1

Haiwen Mao[8] is a 40 year old businesswoman who arrived in Germany from Wenzhou City in 1996. At the time of the interview, she and her husband owned a Chinese restaurant and a dance club in Kassel. Before coming to Germany, her husband ran a restaurant in the Netherlands, which he had opened in 1992. Due to the aggressive competition among numerous Chinese restaurants there, they decided to close the business and try their luck in Germany. Both the restaurant and the dancing club in Kassel are quite successful; they employ 18 full-time and 20 part-time employees. Almost all of the part-time employees are Chinese students in Germany. Ms. Mao's post-tax income amounts to more than 5,000 Euros per month and her family's income comes to more than 13,000 Euros per month.

Concerning the starting of her business, Ms. Mao reported: "It is the first step that costs trouble; it is not easy to start business in Germany, especially for opening a Chinese restaurant. I worked as a cook as well as a waitress in our own restaurant at the beginning, while at the same time I was also pregnant in the seventh month. That period was harsh for me. However, I am quite satisfied with my present life."

Ms. Mao lives with her husband and their three children in a villa-type home of 300 m^2. All their children were born and study in Germany. They speak fluent German and Chinese and have social networks with German classmates and friends. However, in her own daily life and at her workplace, Mrs. Mao is mainly in contact with other Chinese. Half of her friends are Germans and half are Chinese. She still maintains intensive relationships with her family and friends in China, and usually her family visits China once a year. She participates in several organizations, such as the Overseas Chinese Association and some business associations in Germany.

[8] The name has been changed.

Presently, Ms. Mao has no plans to return to China. However, the potential need to take care of her parents in China is the strongest incentive to return.

Case 2

Born in 1983, Xiaoyan Niu is a single businesswoman who originally came to Germany to pursue a masters degree in October 2007. She comes from Qingdan, which was a German colonial town in the late 1890s. Even today, some typical German architecture can be found in her beautiful home city. For this reason, Germany seemed less unfamiliar to her when she arrived. After her graduation from Technical University (TU) Dresden in 2009, she opened a travel agency in Darmstadt. Since her international master degree programme had been taught in English, she faced challenges with the German language when opening her company. It took a long time to register her business, and to upgrade her visa from its former student status. She continues to study German in order to overcome the still-prevailing language barrier. In her day-to-day life, she interacts mostly with other Chinese and still favours Chinese food and culture. Nevertheless, she has devoted herself towards the promotion of educational exchange between China and Germany, and her company is involved with intercultural activities between the two countries. She does not plan to go back to China in the next five years, but in order to reunite with family, she may eventually move to the USA.

7. Conclusions

The results of our survey provide new insight into the social space and personal development of Chinese students, professionals and businesspeople in Germany; the results additionally show how various forms of human and social capital influence these peoples' career choices. This information can help us to understand how to enhance individual human and social capital to support economic development through personal career choices, and how trans-national mobility can benefit both the receiving and the sending country.

Chinese migrants staying in Germany can bring significant benefits to both their host country as well as to their country of origin. Most young Chinese come to Germany originally for the purpose of studying. Afterwards, many outstanding graduates find jobs in Germany where they apply their human capital, which has accumulated from their education in both China and Germany; in this way, they contribute to Germany's economic development. Still, the majority return to China following their graduation, thereby transferring advanced knowledge and international experience to their home country. Both groups act as important bridges connecting China and Germany since they contribute to the establishment of partnerships between the two countries. As employees, Chinese graduates from German institutions contribute specific knowledge to German or Chinese companies, and they are potential investors in both the Chinese and the German markets. The experiences of Chinese professionals and businessmen working in Germany additionally offer perspective for Chinese students who plan to stay in the country. Students can learn from them how to avoid mistakes in their career planning as well as how to better integrate into the host society and professional environment. As demonstrated, there are also clear incentives for companies and policy makers to attract Chinese to Germany; at the same

time, it is in the interest of both countries for Chinese migrants to return to China after a period of working in German companies or public institutions.

Our results show that Chinese women find it attractive to stay in Germany due to Germany's social security system, which offers benefits such as state grants for families with children; women also find that gender discrimination is less pronounced than in China. Married persons are more inclined to stay in Germany; they particularly value their ability to be united with their family, the stability of their living and working conditions, and the educational opportunities for their children. Some Chinese students aim to pursue further education in the US, especially younger students who are generally more open to taking risks and accepting challenges to secure better career opportunities. Most of them are single and feel they have more time to gain a variety of experiences before seeking a more stable lifestyle like the married and older ones. Among the group of Chinese professionals with a bachelor degree, most preferred to stay in Germany, partly because their bachelor degree would be less valued in China and also, because they have gained German language skills which would similarly be of less value in China.

Our results indicate that Chinese people working in Germany generally make efforts to integrate into mainstream German society; however, they are faced with communication problems and cultural differences. The vast majority of the students we interviewed primarily maintained close relationships with Chinese friends and their families in China. Some had part-time paid jobs in Germany for the sake of earning money but will likely not benefit from such work experience in their future career. Among Chinese professional experts and businesspeople, half of their social contacts are Germans. A few of them regularly take part in activities organized by associations, most of which are organized by Chinese.

The situation of Chinese in Germany might mirror the study and work situations of other groups of immigrants in the country. Based on our study, we have developed some recommendations for German authorities to encourage highly-qualified immigrants to stay in the country. Our interviews have shown that the links between social capital and individual career development in both Germany and China offer clues as to how Germany could retain Chinese talent. In general, increased efforts towards social integration of highly qualified and towards further internationalization of education by German authorities would be useful. As a first step, special tutoring programmes should be offered to international students; group or individual tutoring programmes should offer guidance for students' academic and daily life. Secondly, easily accessible language courses should be offered to immigrants to facilitate their inclusion into the host society. Thirdly, there is a need for attractive courses or seminars on multicultural communication, which should be targeted to specific nationality groups of immigrants.

Our results further offer some indications as to how the Chinese government could re-attract outstanding overseas Chinese to return home and contribute to the development of their motherland. One example is more support for young academic families.

Future research activities in this area should cover more regions and should aim to collect more representative samples.

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For decades Germany has been one of the major host countries for international students; at the wake of the 21st century the vast majority comes from Asian countries. With increasing international competition the students, their countries of origin as well as Germany are confronted with specific challenges associated with sometimes conflicting plans, expectations, and apprehensions, amplified by uncertainties. While the students try to adapt to the conditions in Germany to make the best of their stay, their countries of origin ask whether the resources spent on the studies abroad of their nationals are well-invested, and how they might re-attract those who are graduates. As a partaker in the "global race for talents" Germany, finally, questions how it might retain those qualified in highly demanded subjects after their graduation. By contributing to answering these questions, this volume is relevant for all of these stakeholders.

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Among the co-authors are Zhao Xi, Tingting Ma, Rebecca Tlatlik, Sudeh Dehnavi, Robert Sibarani, Wildan Syafitri, Ranjita Nepal and Sadaf Mahmood who were all PhD students at DEMAP at the time of the survey activities. Most of them have graduated since then and have returned to their home countries; others have opted to stay in Germany or to move on to a third country.

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