



Global University Entrepreneurial Spirit Students' Survey

# Entrepreneurial Spirit and Activities of students in China

*Results of the GUESSS Project 2011*



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Finally I would like to thank the students who took the time to answer the GUESSS survey online; without your contribution, this report would definitely not have been possible.

Lena Bernhofer

## HANIEL GROUP CHAIR



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## 1. Preface

The importance of an entrepreneurial spirit for economic dynamics is well known. Entrepreneurs can be seen as drivers of a change process as they help to discover inefficiencies in an economy and introduce new technical information in the form of products and services in the market (Shane and Venkataraman 2000). Entrepreneurship is also not a new phenomenon, its presence and impact can be observed throughout history (Baumol 1990).

As a field of research and major for students at universities, entrepreneurship is of high relevance. Today's students will become tomorrow's entrepreneurs, and observing their entrepreneurial spirit means exploring future potential.

When it comes to students and their career choice, there are still a lot of unanswered questions, for example: What impact does the society, the individual or the universities have on the decision to start a company? What resources are offered/ accessible? Who are these future entrepreneurs?

In short impact, likelihood, and success of our future entrepreneurs are the topics explored by the GUESSSS research study 2011. The **Global University Entrepreneurial Spirit Students' Survey** is an international research project that is conducted every 2 years, this year in 26 countries worldwide. The focus of the following report is on China. It is the first time for China to take part in the survey, and a great number of over 850 participating students from more than 15 universities supported us. – Thanks again at this point; we are looking forward to the next round of the survey!

In this report the results of the Chinese survey will be discussed on a national and international level. And we are convinced that the results provide interesting insight in the students' entrepreneurial spirit for universities, researchers, politicians, and of course the students themselves.

We hope you will find the reading interesting and inspiring!

Lena Bernhofer

Prof. HAN Zheng

## 2. Introduction

### 2.1. Background of the study

GUESSSS stands for ‘Global University Entrepreneurial Spirits Students Survey’ and is an international research project with the focus on entrepreneurial intentions and activities of students. The project, which started in 2003, was originally introduced under the name ISCE (International Survey on Collegiate Entrepreneurship) and renamed in 2008. As a panel survey it has been repeated 5 times since the start. Each time the project has grown larger and more international. In 2011, GUESSSS was conducted in 26 countries. 2011 is also the first time for China to take part in the survey.

The **goals** of the survey are:

- Systematically record and track the entrepreneurial spirit, intentions and activities of students worldwide (panel study).
- Enable participating countries to reflect on their students' entrepreneurial spirit and identify hurdles and pitfalls when pursuing an entrepreneurial career.
- Assess the effectiveness of Universities' entrepreneurship programs, with national and international comparisons.

The results of GUESSSS are of **relevance** for different target groups:

- All participating countries gain insights into the entrepreneurial settings and spirit of their students.
- Universities can evaluate the quantity and quality of their offerings with regard to entrepreneurship and the success of their actions.
- Politics and public get sensitized about entrepreneurship; recommendations for actions can be derived from the survey.
- In the long run students profit from improved university offerings.
- The unique data set provides a basis for scientific publications, thus significant contributions to the scientific community can be made (e.g. a more detailed understanding of antecedents of career choice intentions can be gained).

### 2.2. Theoretical Framework

The theoretical framework of GUESSSS and thus the questions asked in the survey are based on ‘Theory of Planned Behavior’ (TPB) (Fishbein and Ajzen 1975; Norris F. Krueger, Reilly et al. 2000; Ajzen 2002). According to TPB the intentions to pursue a certain behavior are impacted by various factors like for example attitudes and subjective norms. In general intentions are seen as single best predictors of behavior; meaning certain intentions precede certain behavior. In our case the focus is on

students' intentions towards entrepreneurship. To thoughtfully analyze the entrepreneurial spirit of students the university context is added to the theoretical framework (Figure 1).

The theoretical framework can be illustrated as follows:

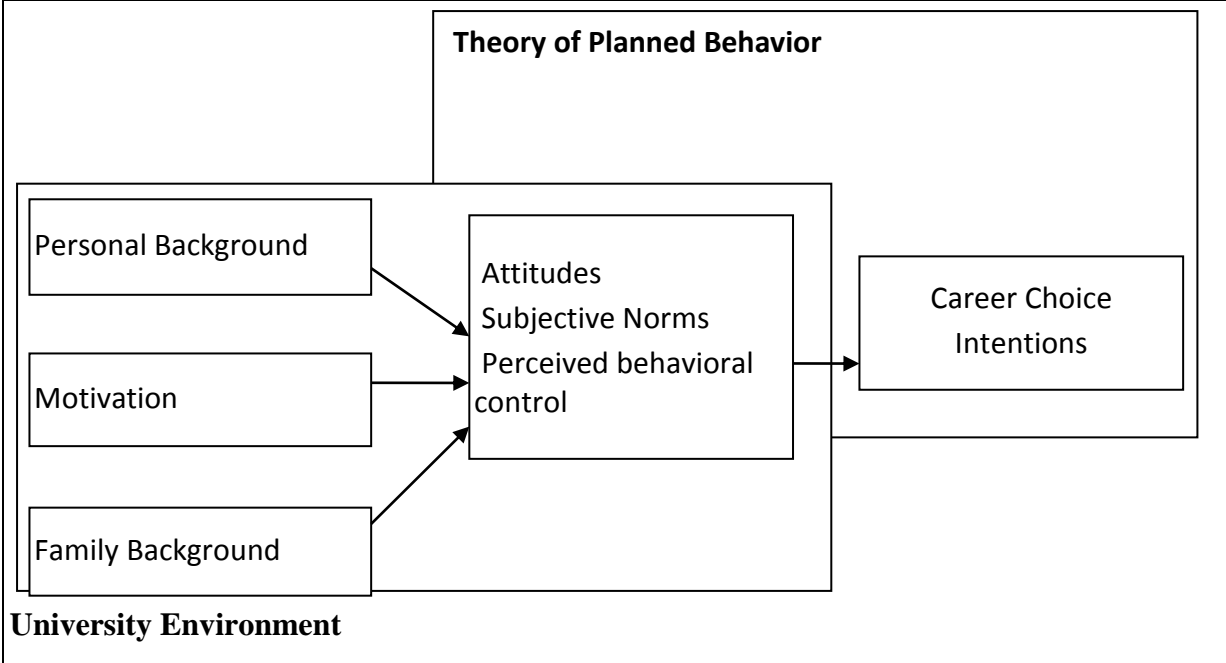


Figure 1 Theoretical framework

Motivation, personal and family background might influence the career choice intentions of students. Personal background refers to age, gender, field of study, etc. whereas motivation is linked to desirable aspects and characteristics of a future job (Carter, Gartner et al. 2003). Different motivations may be linked to different career choices, e.g. founder or employee. The family background mainly refers to the parents' occupation and their closeness to the student.

A universities entrepreneurial education and environment might also affect students' intentions towards entrepreneurship. The university setting can for example inform and inspire students, and therefore (indirectly) increase their willingness to choose entrepreneurship as a career path (Souitaris, Zerbinati et al. 2007).

After the analysis of the career choice students are asked about their entrepreneurial activities (if existent) and are separate into three groups: students planning to found a company, students who have already founded a company and students that might take over the family company. The different cases are discussed and analyzed in detail.

### 2.3. Project Coordination

On an international level the project is coordinated by the Swiss Research Institute of Small Business and Entrepreneurship at the University of St. Gallen (KMU-HSG) in Switzerland. For each participating country a representative is responsible to coordinate the survey on a national level. In China, the survey was conducted by the Haniel Group Chair for Marketing and Entrepreneurship, CDHK, Tongji University, Shanghai. It was the first time that China participated in the periodically organized GUESSS project.

We started organizing the project by contacting professors, entrepreneurial student groups, administrative personal and friends to find partner universities. Our focus was on the top 10 ten universities in China, but we also included every other university that agreed to support us. We used the top 10 approach, as these universities are trend-setters and role-models for other universities in China.

In the end the most successful way to organize the distribution of the questionnaire was to send out the link through personal contacts and official mailing lists. The computer lab - another method that we tested - turned out to be very successful, too. We rented it for several days and invited students to fill out the survey on the local PCs. However, a paper version was not provided, but we will try our best and include this tool in the next survey.

## 3. The Survey in China

### 3.1. Participants and Response Rates

University (Chinese & English)	Total	N	Rate
安徽大学 (Anhui University)	5.726	78	1,36%
东华大学 (Dong Hua University)	212	16	7,55%
复旦大学 (Fudan University)*	6.395	112	1,75%
合肥工业大学 (Hefei University of Technology)	230	13	5,65%
南京大学 (Nanjing University)*	100	8	8,00%
北京大学 (Peking University)*	800	13	1,63%
人民大学 (Renmin University)*	420	15	3,57%
上海交通大学 (Shanghai Jiaotong University)*	850	8	0,94%
四川大学 (Sichuan University)	1.000	8	0,80%
四川大学锦城学院 (Sichuan University JinCheng Institute)	800	8	1,00%
东南大学 (Southeast University)	300	2	0,67%
同济大学 (Tongji University)	4.172	390	9,35%
清华大学 (Tsinghua University)*	500	9	1,80%

西安电子科技大学 (Xidian University)	1.500	25	1,67%
浙江大学 (Zhejiang University)*	112	1	0,89%
中南财经政法大学 (Zhongnan University of Economics and Law)	850	19	2,24%
其他 (Others)	5.900	128	2,17%
<b>Total</b>	<b>29.867</b>	<b>853</b>	<b>2,86%</b>

\*among the top 10 universities in China

Table 1 Participating universities and responses in China

Our sample was drawn from students studying at 16 universities throughout mainland China. Of the 29.867 students invited to participate, a total of 853 completed the survey. The resulting response rate of 2,86% is relatively low compared to the average response rate of all participants of the last GUESSS survey in 2008 (4,9%) . One of the reasons of the hesitant participation might be that the link to the survey was mainly distributed via students' email addresses. Compared to e.g. networking platforms the email addresses are seldom used.

In addition to the group of students who study in China the international sample contains another group of Chinese students. Namely Chinese students who study abroad:

<b>University</b>	<b>N</b>
Republic Polytechnic	72
National University of Singapore	42
Rijksuniversiteit Groningen	39
Erasmus Universiteit Rotterdam	37
Nanyang Polytechnic	23
Hannover, Universität	18
Bayreuth, Universität	15
Universiteit van Tilburg	14
Singapore Polytechnic	11
Hanzehogeschool Groningen	11
Universiteit Utrecht	11
Siegen, Universität	10
Glion Institute of Higher Education	9
Universität St. Gallen (HSG)	7
Universiteit Twente	7
Others	127
<b>Total</b>	<b>453</b>

Table 2 Universities with Chinese students abroad

### 3.2. Sample Profile

The international sample contains 853 students that study in China and an additional group of Chinese students who study abroad (453). 20 students among the 853 that study in China are exchange students. The data analysis in the following paragraphs focuses on the number of students who study in China (China (Students in China)), but also includes the total number of Chinese students in China and abroad (Chinese (total)) for comparison.

#### 3.2.1. Personal Information

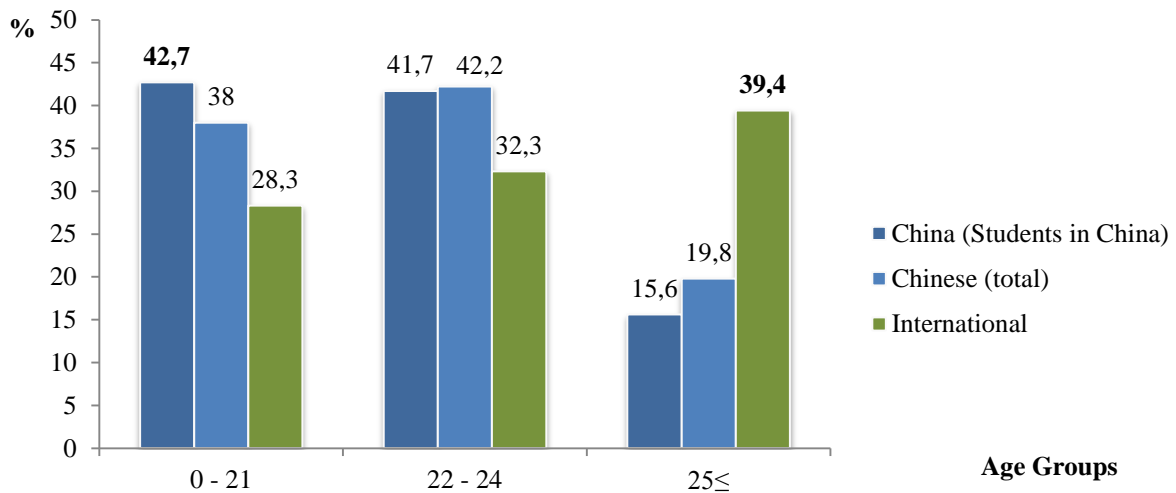


Figure 2 Age structure of the sample

The **age structure** of the Chinese sample differs from the international GUESSS data. The percentage of students in China younger than 21 years accounts for 42,7% of the sample, which is 14,4% more compared to the international data. The reverse case can be observed in the age group 25 years and older, here the international sample exceeds the students age in China by 23,8%. The average age of students in China in the sample is 22,45 years which is comparable to official statistics in China with an average age of all students of 22,74 years.<sup>1</sup>

<sup>1</sup> The average age of all students in China is calculated, the data is mainly based on statistics of the Ministry of

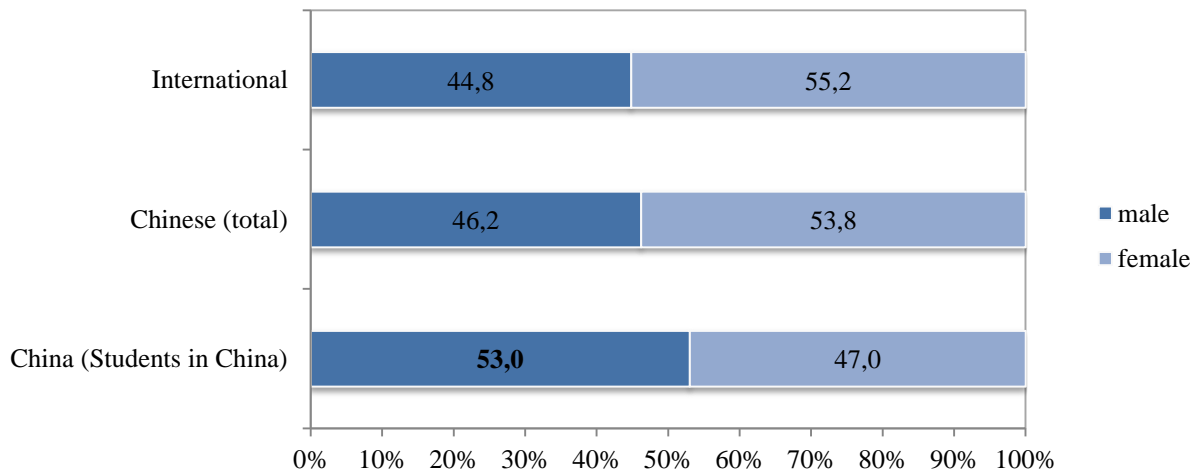


Figure 3 Shares of male and female students

Concerning the **gender** it can be observed that the Chinese sample (students in China and Chinese students abroad) like the international, contains an almost equal amount of male and female students. The sample of students in China has a slightly higher share of male students (53%).

The analysis of the **marital status** shows that with 98,1% most of the students in China are single. In the international sample 12% of the students are married. The difference might appear due to the deviating age structures of the samples (Figure 2).

The number of **older siblings** is impacted by China's one-child policy. Around 60 % of the Chinese students do not have older brothers or sister, whereas in the international sample only 40% do not have an older sibling (Table 3).

Number of older siblings	0	1	2	3 and more
China (Students in China)	60,4%	25,3%	9,1%	5,2%
Chinese (total)	66,3%	20,6%	8,6%	4,5%
International	40,7%	33,4%	16,2%	9,7%

Table 3 Number of older siblings

The **nationality** of the students who study in China is mainly Chinese (97,7%). 20 students out of the 853 participants are **exchange students**. The low level of exchange students is comparable to the international sample (1,6% exchange students). Interestingly, the percentage of exchange students among students in China (2,3%) and all Chinese students (2,9%) (in China and abroad) is almost identical. This leads to the assumption that Chinese students go abroad for their whole studies and not just for a short time.

### 3.2.2. Student related information

#### Level of studies

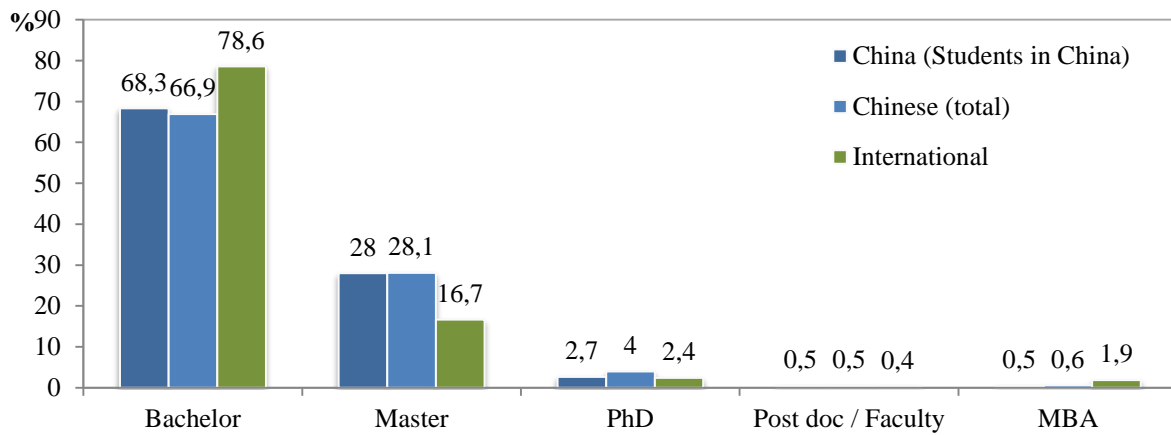


Figure 4 Level of studies

The greatest share of students study on a Bachelor-level followed by master students that account for around 28% in the Chinese sample. Compared to the international sample the students in China are more evenly distributed between Bachelor and Master level. The small numbers of PhDs and Post docs in the survey display a realistic proportion of the actual numbers.

## Field of Studies

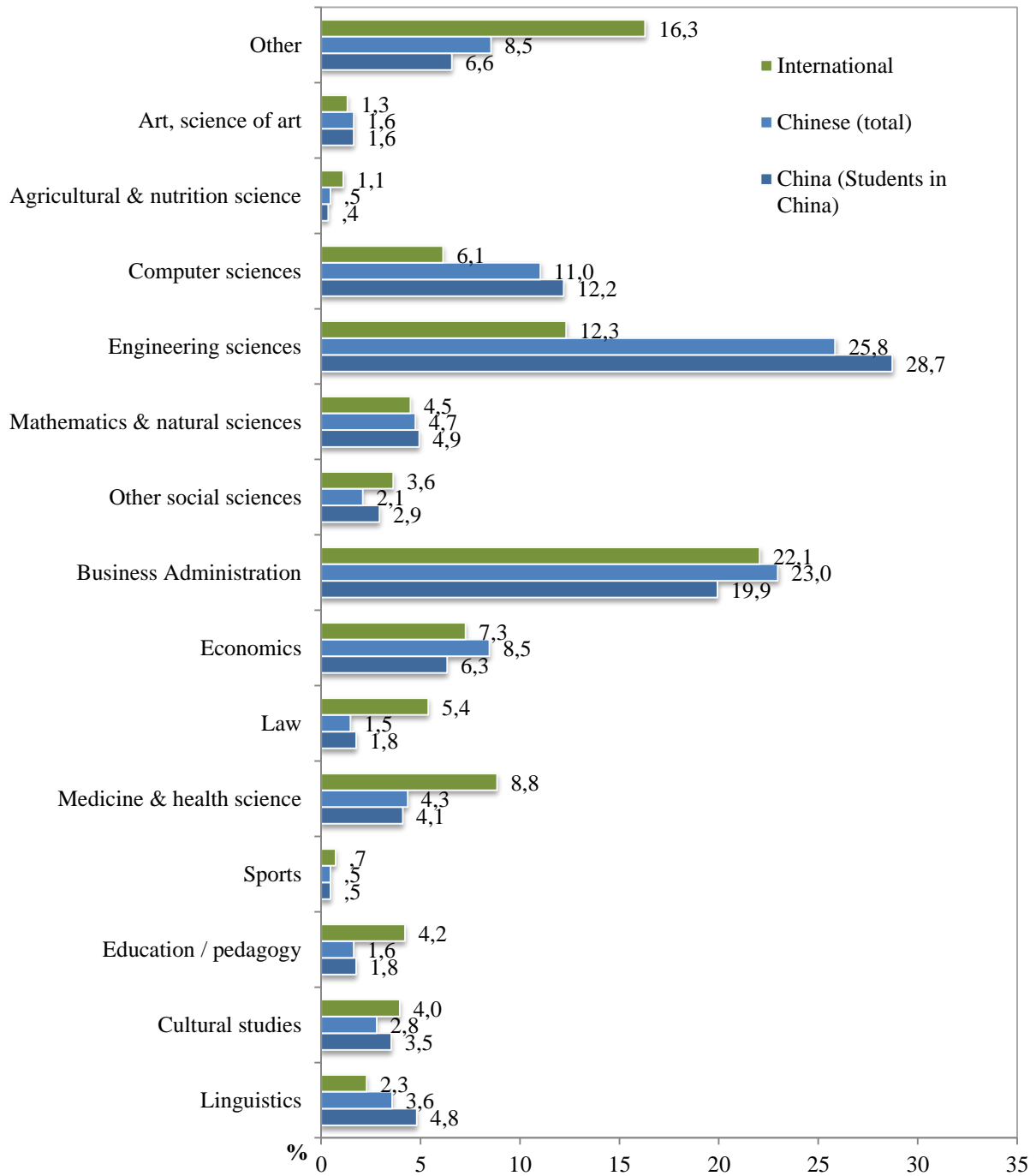


Figure 5 Field of studies

The most common field of studies in the Chinese sample is engineering science, which differs from the international sample where business students account for the greatest share. Besides that difference, the distribution among the fields of study listed above is similar in each sample.

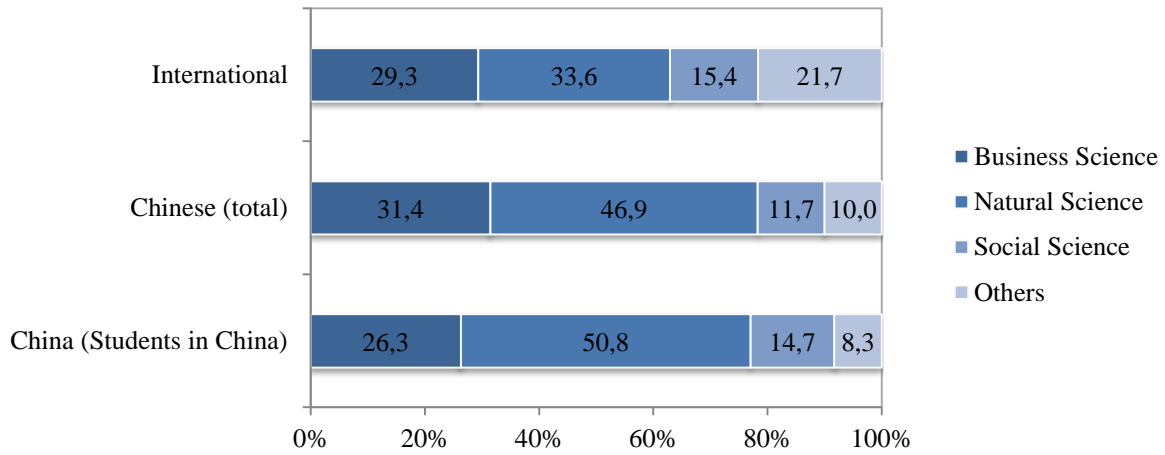


Figure 6 Field of Studies (grouped)

By grouping the fields of study in higher level categories, it can be observed that not just the engineers but the whole field of natural science is overrepresented in the Chinese sample (Figure 6). For the further analysis in chapter 4 that should be kept in mind.

## 4. Career choice intentions and background analysis

### 4.1. Career choice intentions

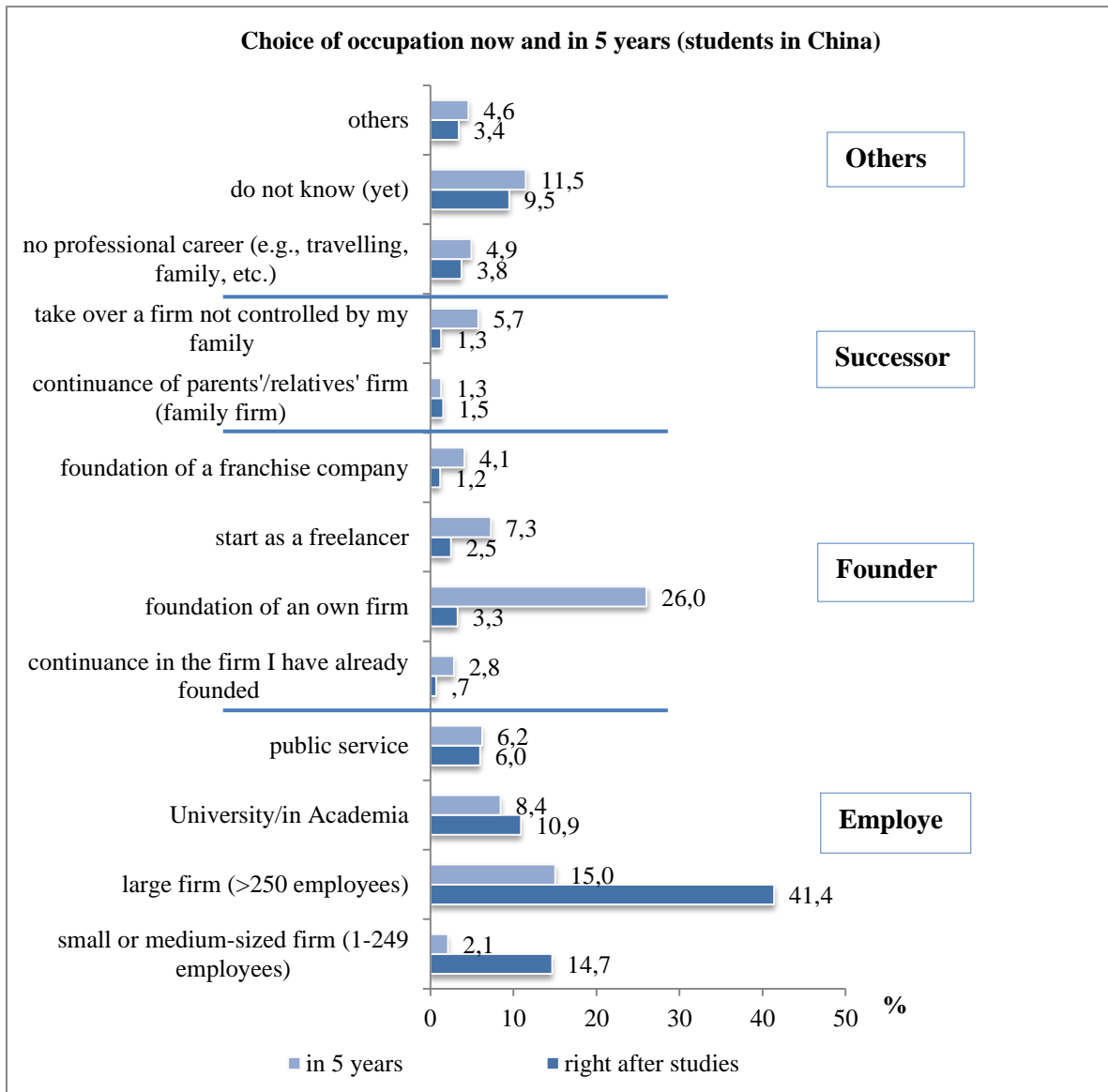


Figure 7 Students` career choice intentions

Right after completion of studies most students in China (41,4%) prefer to work for a large firm, with small or medium-sized firms (14,7%) on the second place.<sup>2</sup> This picture changes after 5 years, the wish to work for a large company drops to 15% and foundation of an own firm is now mentioned as the most preferred option (26%). Overall, after 5 years a shift from being employed to founding activities becomes visible and all career choices related to foundation gain in popularity, while the employment considerations decline (Figure 7).

<sup>2</sup> In the international sample *right after studies* the ranking is the same: 26,2% prefer to work in a large firm and 22,4% in a small/ medium sized firm. The wish to work for a large firm is less dominant in the international sample than in the Chinese (26,2% compared to 41,4%).

The change from ‘working in a large firm’ to ‘foundation of an own company’ is more extreme among Chinese students (in China and abroad) then compared to the international data set (Figure 8). The wish to work for a large firm drops around 25% among both Chinese samples (11% international), whereas the motivation to found an own company increases with almost the same amount (23%). The increase in the desire to become a founder is similar to the international sample (17%). In general the change related trends in the Chinese and international sample go in the same directions.<sup>3</sup>

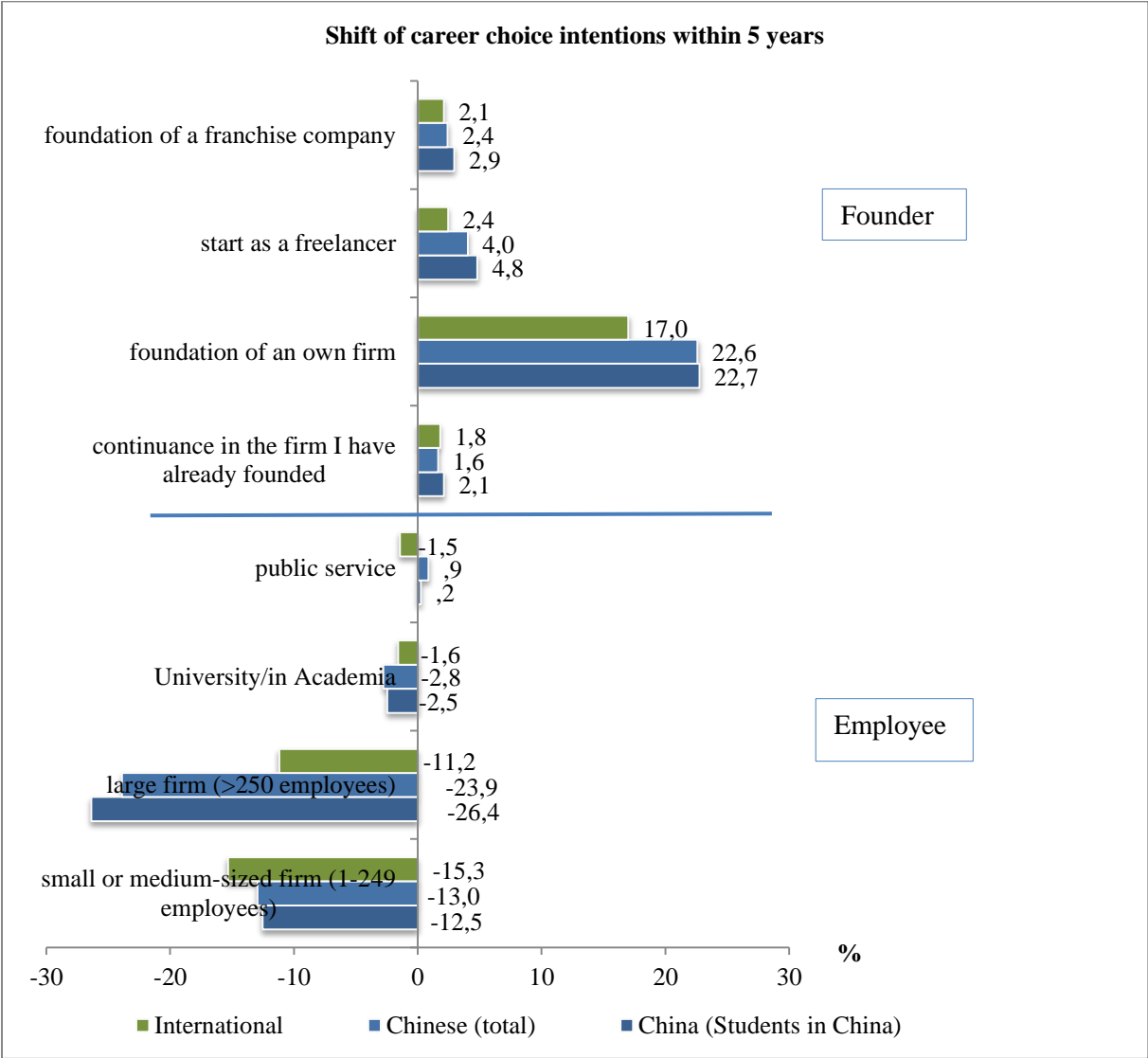


Figure 8 Shift of career choices

<sup>3</sup> The commitment to the career choice was analyzed, too (Allen and Meyer 1990) and does not show great differences between the Chinese and international samples. With a mean between 5,10 and 5,70 the career choice indicated above is meaningful to students.

### Career choice intentions of different levels of study

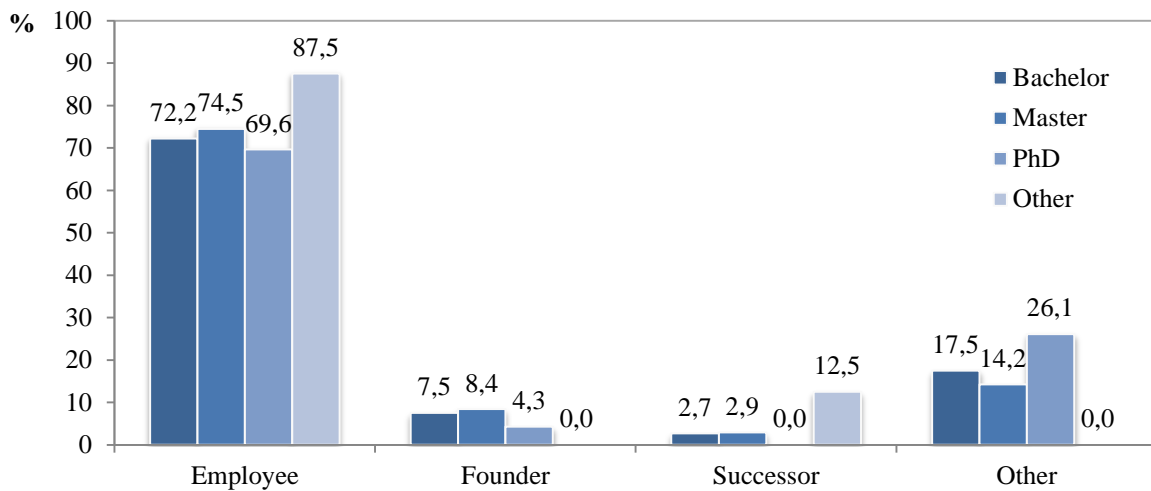


Figure 9 Career choices of different levels of study (right after studies)

Figure 9 analyses students in China and their career choice intentions *right after their studies*. It can be observed that almost the same shares of Bachelor and Master students intend to become employees or founders (72,2% vs. 74,5%). 87,5% of ‘others’ prefer to become employees; however, due to the small absolute numbers of that category it is not discussed further. The change of the career choice intentions over time is also similar between the different levels of studies.

Besides the level of education, different majors can reveal different preferences for one occupation or another. The next paragraph focuses again on the Chinese sample and adds an international comparison.

### Career choice intentions of different fields of study

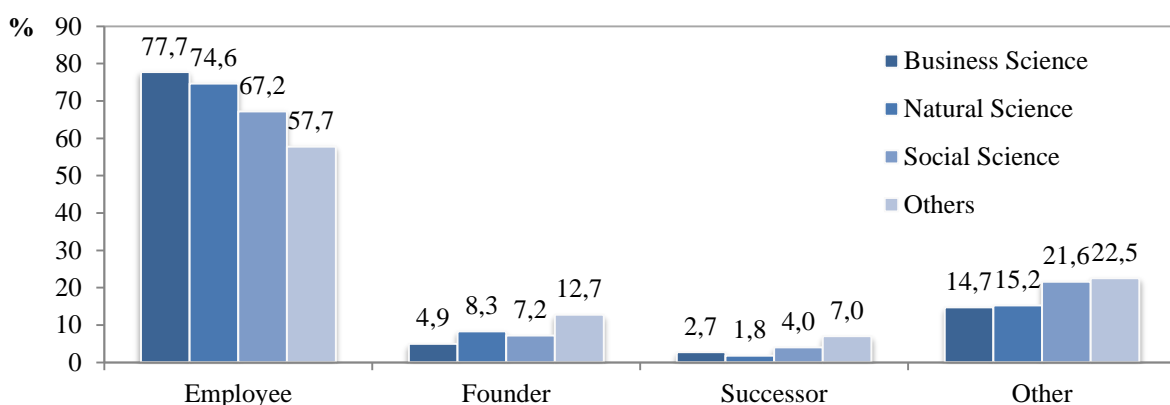


Figure 10 Career choices of different fields of study (right after studies)

The analysis of different fields of study (Figure 10) in the Chinese sample (students in China) show that *right after the finish of the studies*:

- Most of the business science students want to become employees, closely followed by natural science students.

- Founder and Successor are the least preferred options, with ‘Other Science’ providing the largest shares in these fields.
- Slightly more natural science students want to become founders (8,3%) compared to business science (4,9%).

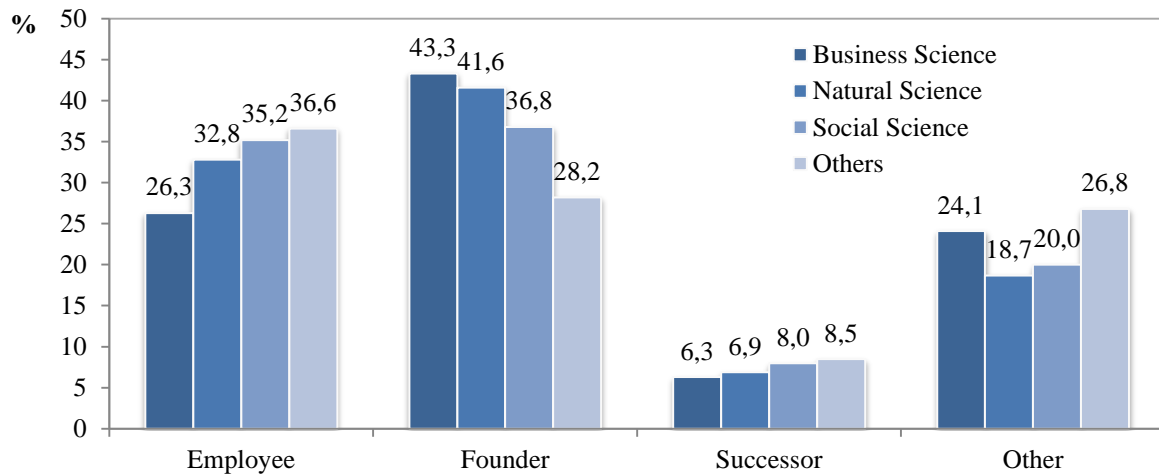


Figure 11 Career choices of different fields of study (5 years after studies)

*Five years after* the completion of studies the picture changes (students in China, Figure 11). Now most of the business science students intend to become founders, and their share in the employment category drops to the lowest level of all students. The other fields of study show a similar trend with natural science students almost behaving in the same way but less extreme than business science majors. Another category that gains shares over time is succession. It seems that students first try to gain experiences in other companies, before working in the family firm (Figure 11).

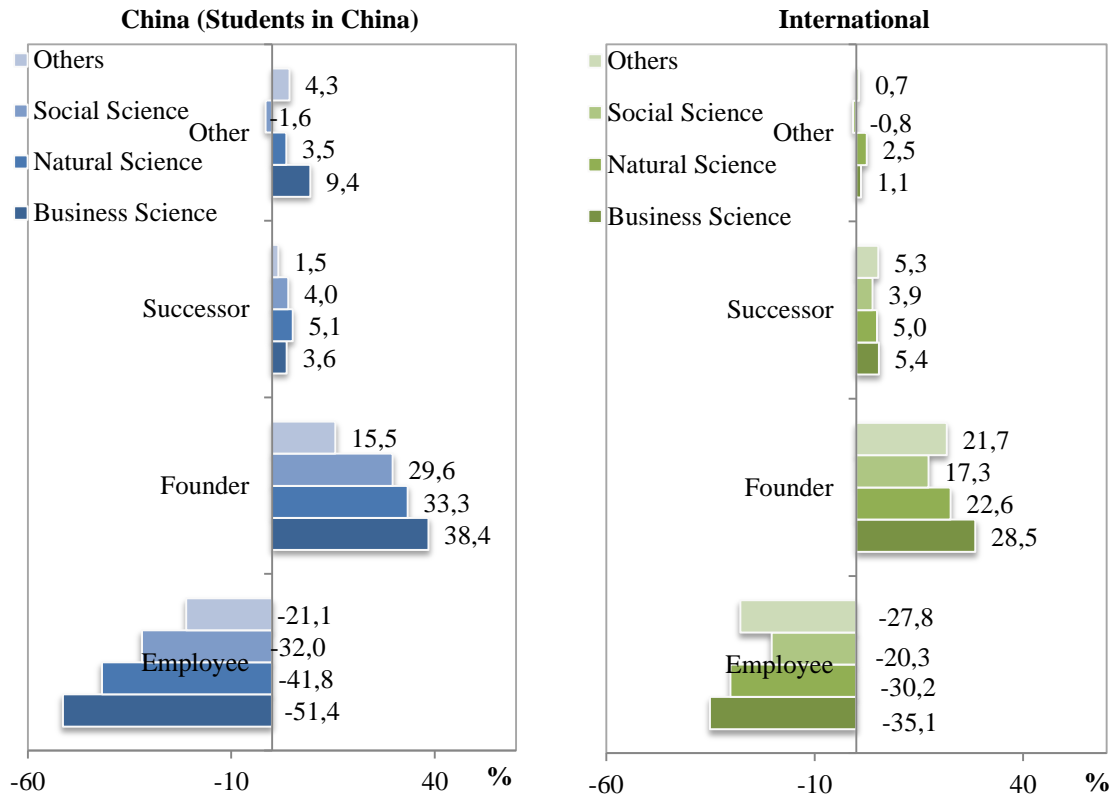


Figure 12 Change of career choice over time (comparison Chinese and international sample)

The comparison of the change of career choices over time between the Students in China and the international sample displays a relatively lower shift and a more even distribution among the fields of study in the international sample. In both samples the business science students change the most, followed by natural science.

## 4.2. Motivation

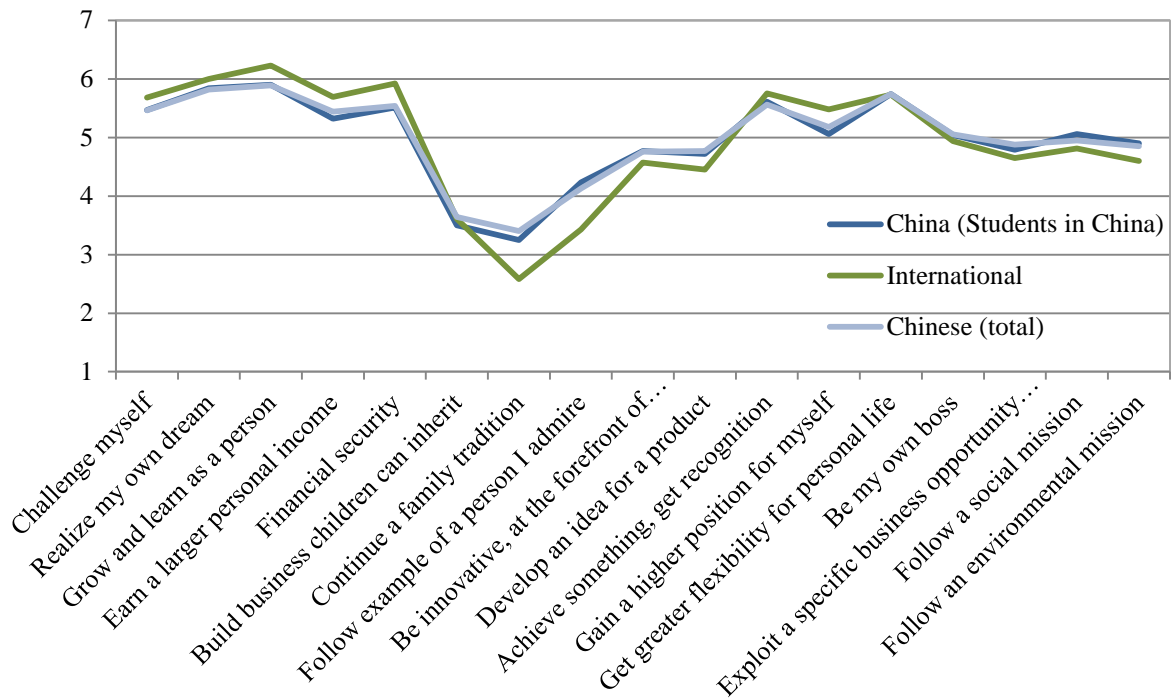


Figure 13 Motives for a future career path

Motives for the future career path are similar among the international students and the students in China and abroad. (The two Chinese samples display almost identical motives.) The two bigger differences that become visible are related to ‘roles’ and ‘financial success’. Roles describe a student’s desire to continue a family tradition and/ or follow the example of an admired person (Carter, Gartner et al. 2003). With a mean of 3,25 in the first (international: 2,58) and a mean of 4,23 (international: 3,43) in the second question, the students in China rank the importance of roles higher than the international students (scale: 1=very unimportant, 7=very important). The overall importance of roles is considered to be low. Financial success, represented by: ‘Earn a large personal income’ and ‘financial security’, is slightly higher in the international sample; in both samples financial success is considered to be important (>5) (Figure 13).

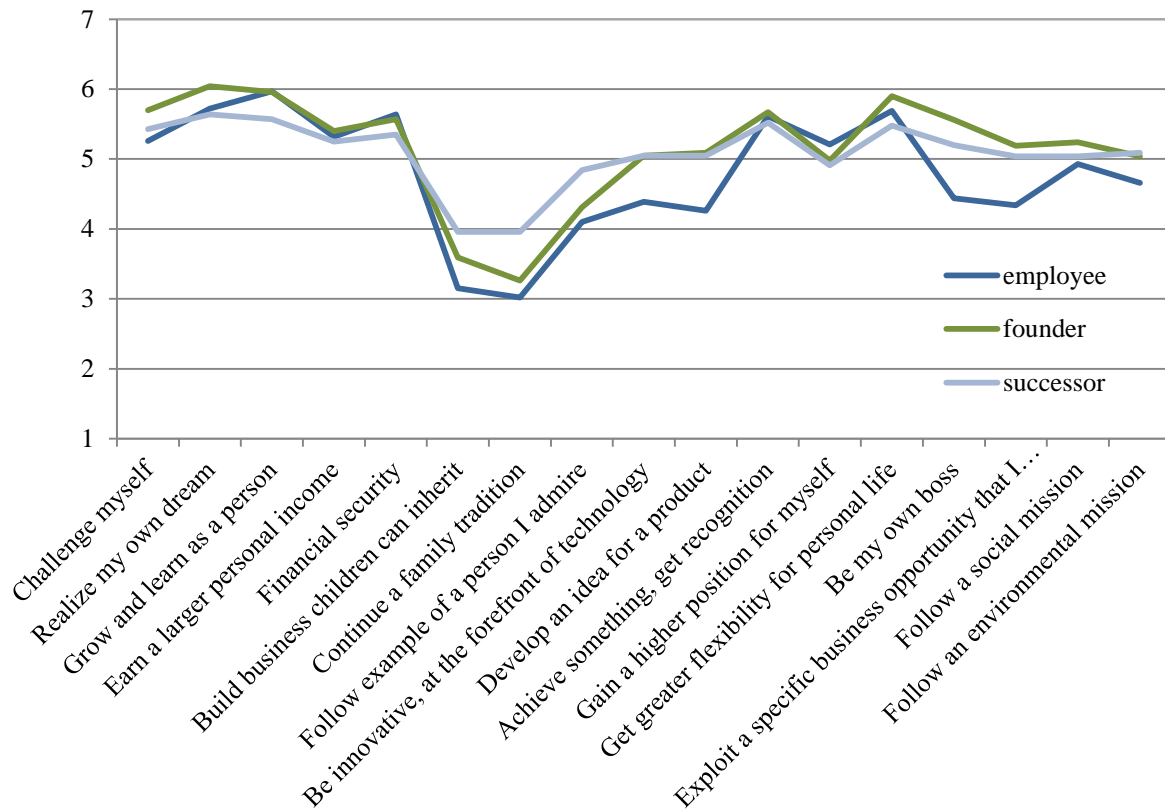


Figure 14 Motives and career choice of students

Figure 14 displays a more detailed analysis of the career motives of students in China. The curve is split in three parts depending on the career choice five years after studies. The intentional founder differs from the others in two aspects he ranks self-realization and independence higher (Carter, Gartner et al. 2003).<sup>4</sup> The successor ranks ‘roles’ higher than the others. And the employee displays the greatest differences in lower rankings for ‘roles’, ‘innovation’ and ‘being one’s own boss’.

The overall ranking of motivations follows a similar trend among the career choices and also among the different samples discussed above. All motivations – besides ‘roles’ - are considered to be important (>4).

<sup>4</sup> Self-realization includes ‘challenge myself’ and ‘realize my own dreams’, independence includes ‘get greater flexibility for personal life’ and ‘by my own boss’.

### 4.3. Family Background

When asked about their parents occupation 788 (92,4%) out of the 853 students in China indicate that their parents are not self-employed.<sup>5</sup> In 39 (4,6%) cases the father is self-employed, in 8 (0,9%) cases the mother and in 18 (2,1%) both parents. These numbers are well below the international sample, here 16,2% of the fathers, 5% of the mothers and 8,9% of both parents are self-employed. The differences are not surprising and can be explained with China's historical development.

Besides the parents occupation the role of the family is analyzed too:

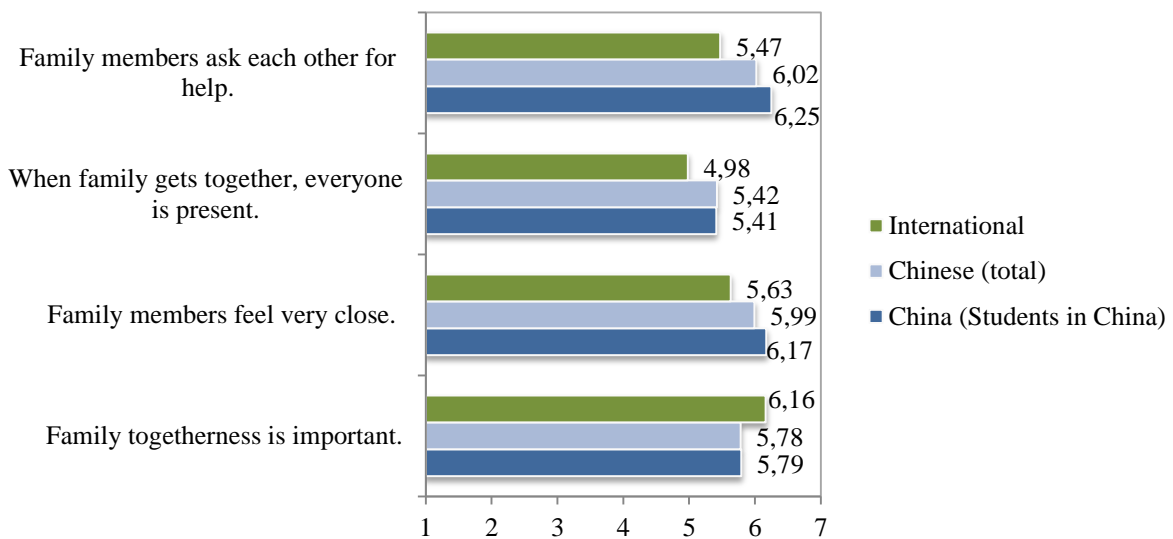


Figure 15 Family cohesion

On a scale from 1 (strongly disagree) to 7 (strongly agree) it becomes visible that for students in China and abroad family plays a more important role than in the international sample. Family togetherness itself however is slightly less important in comparison.

<sup>5</sup> In chapter 5.4 'Family Business' the 65 students with self-employed parents are analyzed with regard to succession.

#### 4.4. University Context

With regard to entrepreneurship, university offerings are numerous and diverse. Lectures, networking possibilities, and access to resources can, for example, be part of the programs and help students gain information, develop their ideas, and transform the latter into valuable businesses.

The variety of entrepreneurial programs, students' satisfaction, and the universities entrepreneurial mind-set are analyzed in the following section:

##### University offerings

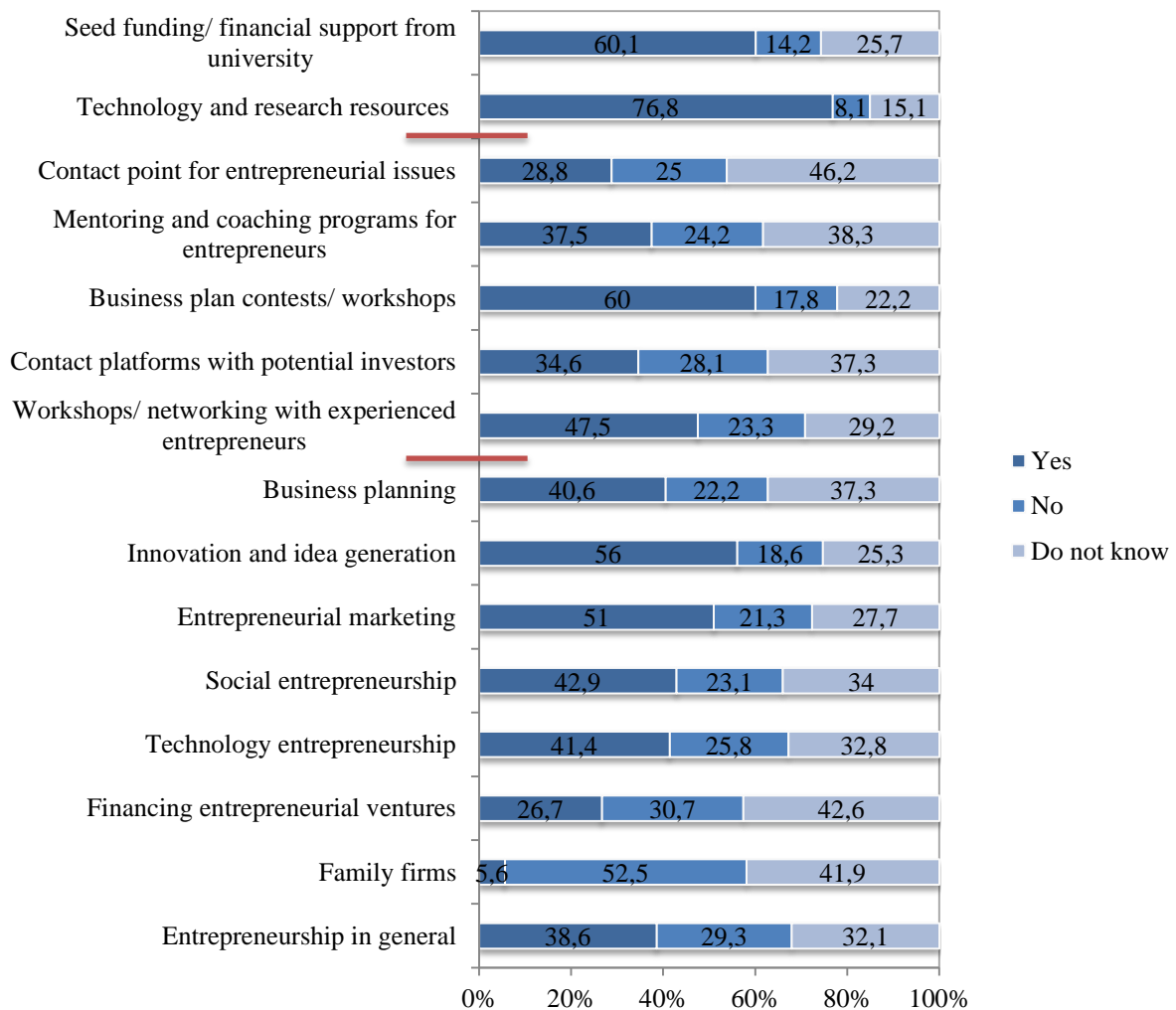


Figure 16 University offerings

The Chinese universities are practically oriented, with resources and the business plan contest as the leading offers (Figure 16). In the international sample (besides 'research resources' 75%) 'entrepreneurship in general' (61%) and 'business planning' (54%) are the leading categories and indicate a rather theoretical approach. Both 'entrepreneurship in general' (39%) and 'business planning' (41%) are lower in the Chinese sample (Figure 17). The attendance rate - not equal to the confirmation of the existence of the offer ('yes') - in the Chinese sample accounts for 16% of the students and 19% in the international sample.

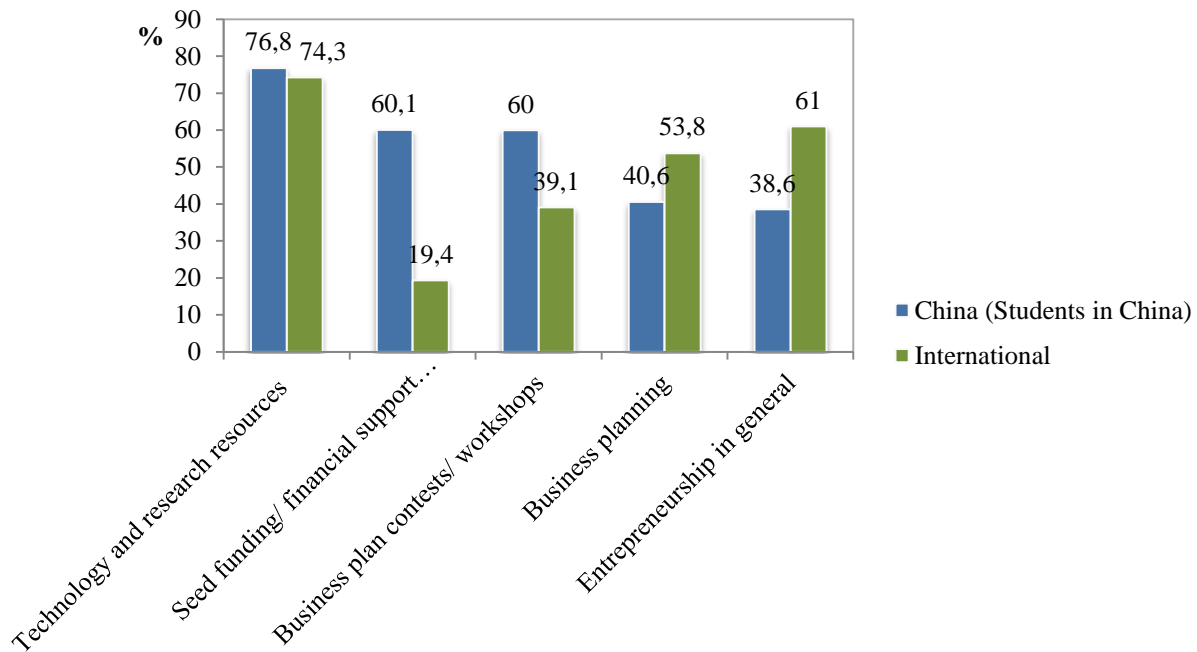


Figure 17 University offerings compared (China and international)

Figure 17 displays a comparison of the two samples ‘students in China’ and ‘International’, when students confirmed the existence of university offers. (Only the most common offers were included.)

It seems that students in China are better informed about university offerings than the international average (32% of the students in China choose ‘Do not know’, whereas in the international sample 45% picked that option, Figure 13). Students who answered with ‘no’ or ‘do not know’ were also asked if they are interested in that class in general. In almost all cases the answers were positive, only additional classes about family firms were declined (in the Chinese and the international sample). The satisfaction with the existing offers is slightly positive in both samples (mean of 3,6 on a scale from 1-5, with 5 = very much).

### University environment

The first part of the analysis of the environment focuses on the universities offerings. Students were asked whether the classes they attended increased their understanding of entrepreneurship, enhanced their practical skills or the ability to develop networks or to identify an opportunity. The results in China indicate that with an average mean of 4,5 (scale from 1-7, with 7=strongly agree) the positive effect of the classes is rather low.<sup>6</sup>

The general questions in the second part of the analysis about the entrepreneurial climate at university and entrepreneurial minded classmates were answered in a similar indifferent way (average mean of 4,3 in China and 3,96 international).

<sup>6</sup> With an average mean of 4,14 the results in the international sample are similar.

## 5. Entrepreneurial Activities

### 5.1. Potential entrepreneurs

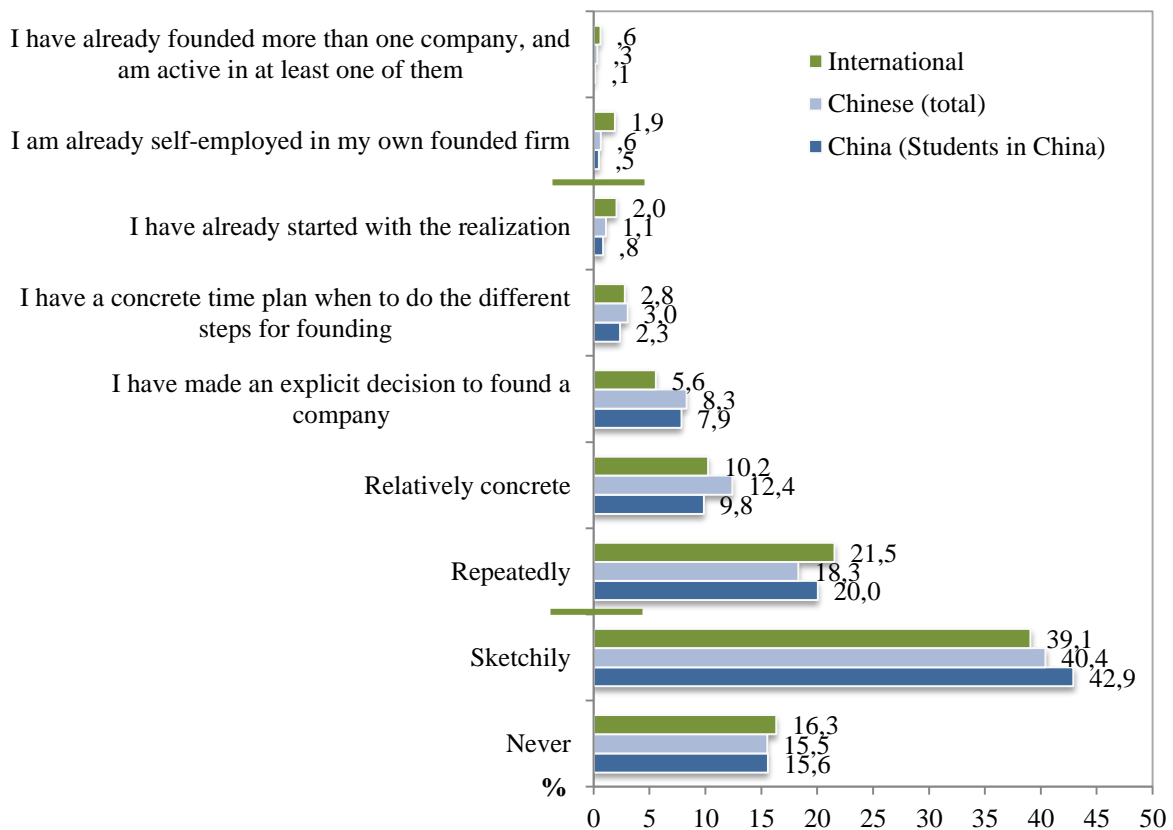


Figure 18 Foundation of a company

The answers of the students presented in Figure 18 are used to divide the samples into three groups: students who never or barely thought about founding a company, intentional founders, and active founders. The size of the groups differs, but the variation is similar between the samples:

	China (Students in China)	Chinese (total)	International
1. no founding intentions	499 (58,5%)	721 (55,9%)	51.653 (55,4%)
2. intentional founders	349 (40,9%)	556 (43,1%)	39.274 (42,1%)
3. active founders	5 (0,6%)	12 (0,9%)	2.323 (2,5%)
<b>total</b>	<b>853</b>	<b>1.289</b>	<b>93.250</b>

Table 4 Founding intentions of students

The numbers of intentional founders and founders provide the basis for analysis in paragraphs 5.2 and 5.3. Not included in this overview are successors (5.4). Succession is a separate category as it presents an additional career path to some students and is related to the family background (4.3).

## 5.2. On the way to foundation

In this paragraph the focus is on intentional founders. The focus narrows the samples down to 349 students who study in China (instead of 853) and 39.274 students in the international sample (instead of 93.250) (Table 4). Aspects like the preferred industry, family support, choice of partners, and barriers to foundation are discussed to provide some insight in the founding process and differences that occur in China.

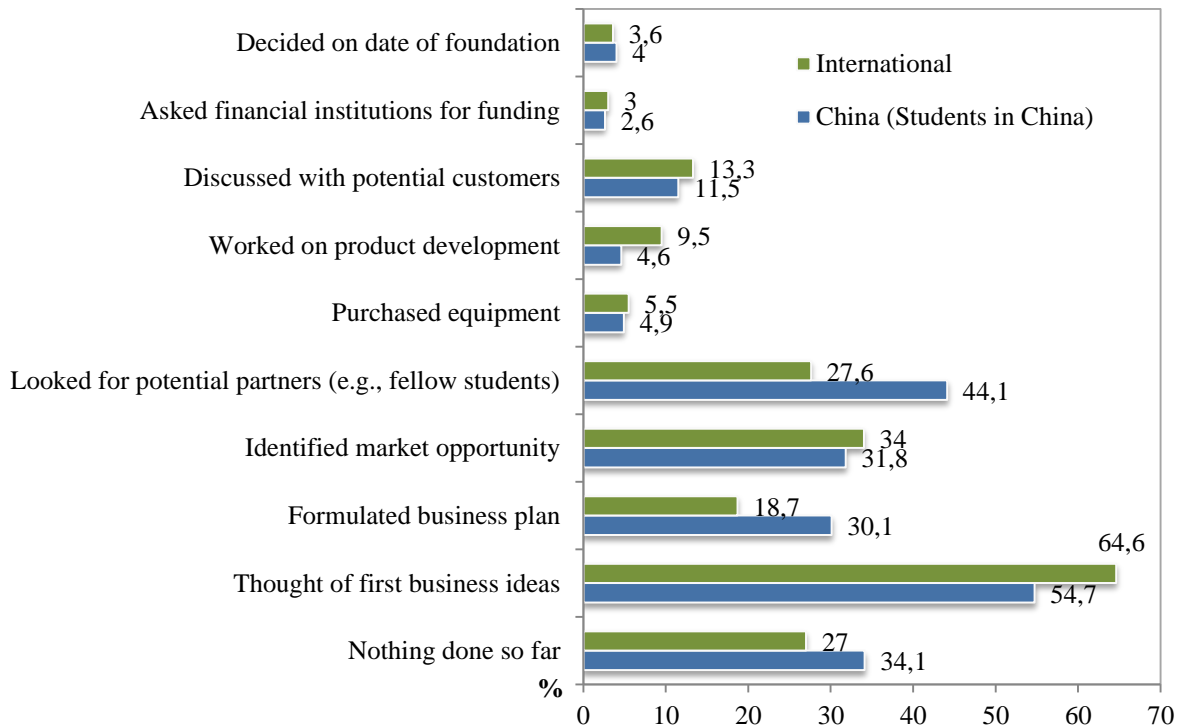


Figure 19 First steps to found a company

Most of the intentional founders thought of his or her first business idea (64,6% in the international sample and 54,7% of the students in China), looked for potential partners and/ or identified market opportunities. Between 5% and 10% of the students started to discuss with potential customers, worked on the product development or purchased equipment. The smallest shares are more concrete steps like the decision on a founding date and the funding (less than 5%).

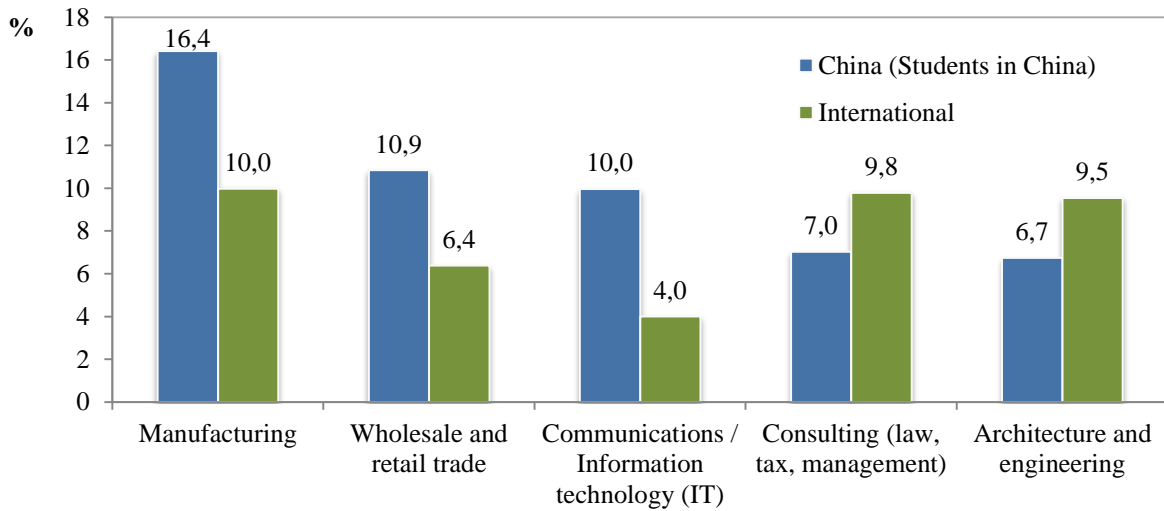


Figure 20 Preferred industries

The top 3 industries that students in China plan to be active in are manufacturing, wholesale, and IT. In the international sample manufacturing is also the most popular choice, but the second and third places are taken by consulting and architecture. The reasons for the different choices in industries are likely to be found in the development of the Chinese market.

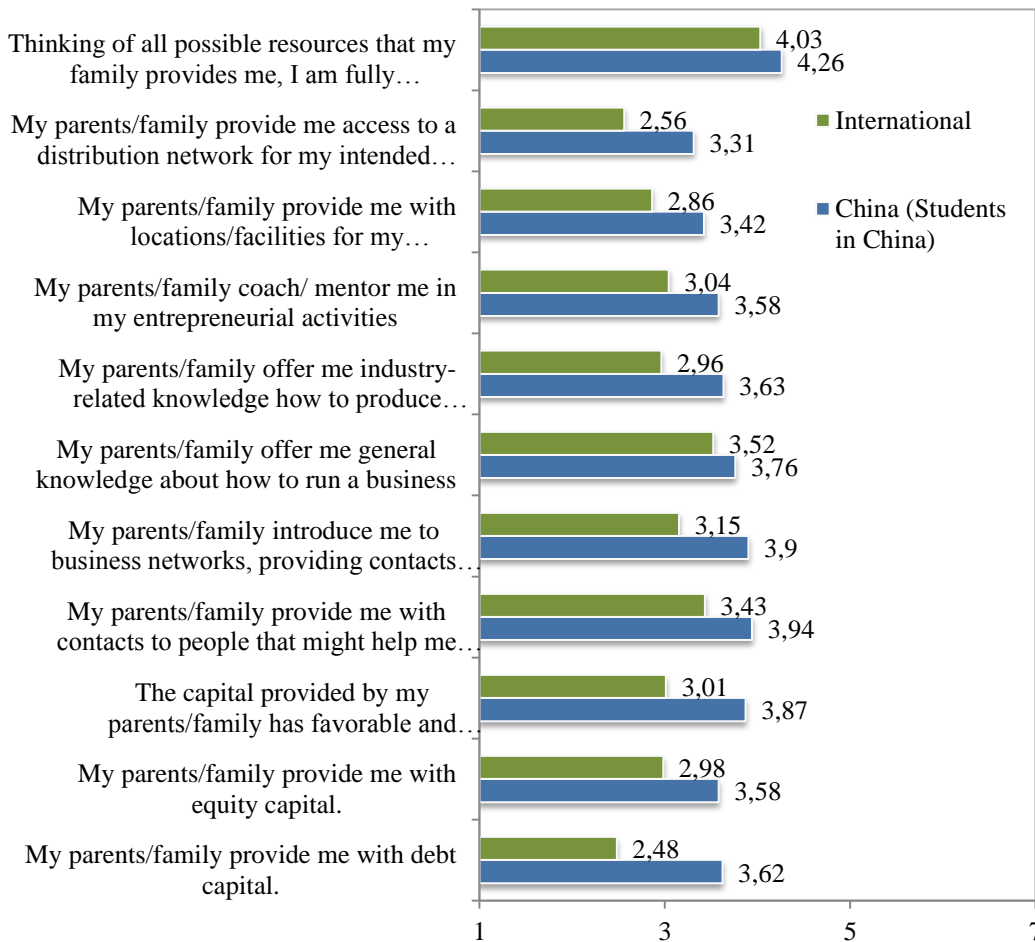


Figure 21 Family as a resource

Family support as a potential business resource does not seem to play an important role in both samples (1=not at all, 7=very much; mean < 4). For students in China family support is ranked higher in all categories in Figure 21, leading to the assumption that - although not considered very relevant - the family as a resource is more important in China than abroad.

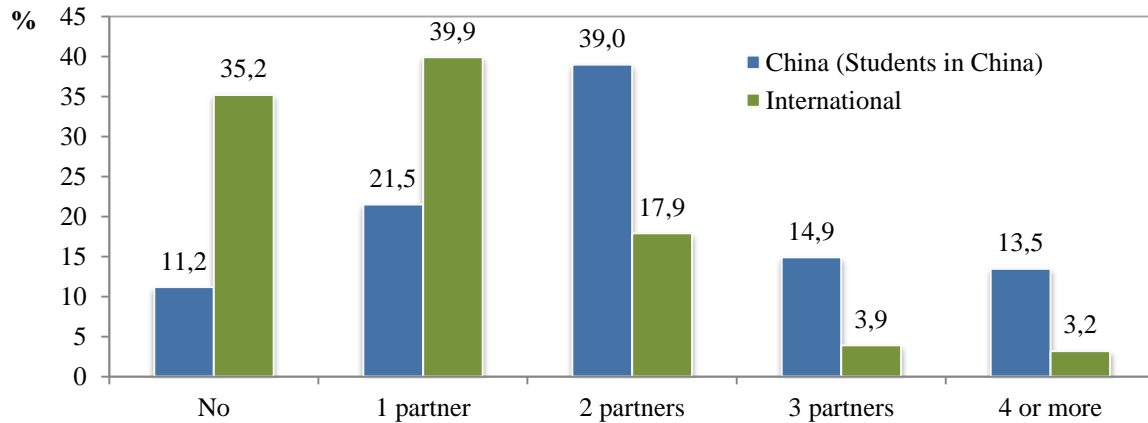


Figure 22 Number of potential partners

The majority of students in China prefer to found a company with one to three partners, only 11% would decide to work alone. In the international sample working alone or with only one partner is chosen by 75,1% of all students.

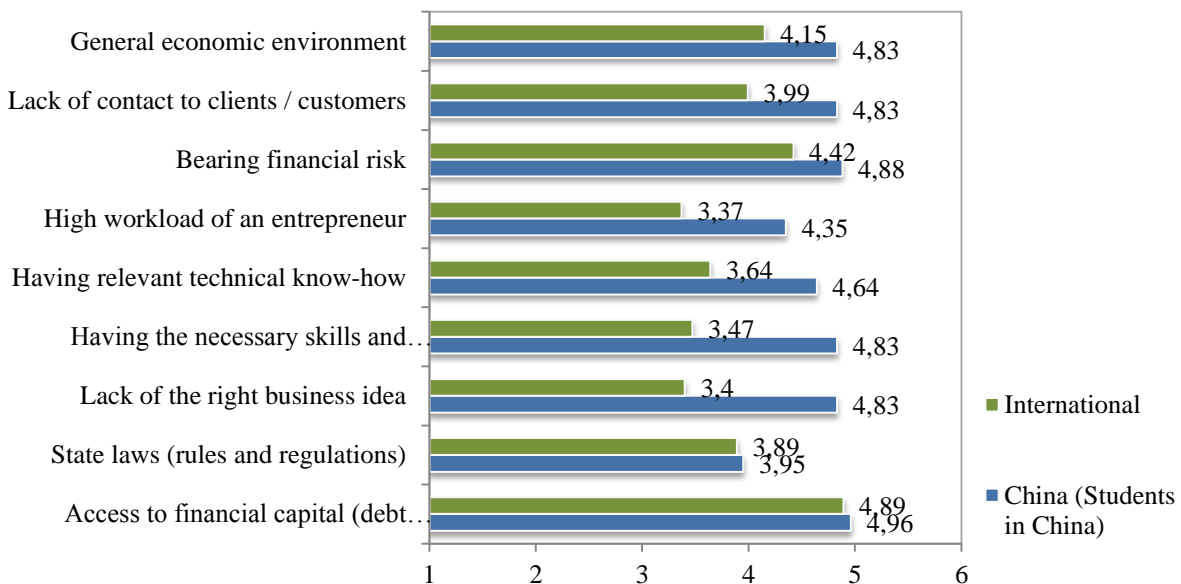


Figure 23 Barriers to foundation

There are several barriers on the way to found a company; in general these barriers are perceived to be higher in China. Interestingly, access to financial capital is named to be the highest barrier, although 60% (19% in the international sample) of the students in China indicated that financial support is offered by the university (Figure 16/ 17).

### 5.3. Student founders

Five students in the Chinese sample founded their own company. As the number is too low for a detailed analysis I will only mention some facts about these foundations:

- Choice of partners: one student founded alone, two with one partner; partners are mainly recruited from a circle of friends outside of university.
- The number of employees is below 25 for all start-ups, last year's sales are all higher than 100' RMB.
- The companies are active in different industries (two are in IT), the sources of the business idea are mainly: hobby, self or fellow students.
- The business decisions are independent from the family (mean of 6,67 on a scale from 1 to 7, with 7 strongly agree), the greatest share of funding is provided by family, friends and own funds.
- Performance is ranked positive compared to competition

Table 5 lists statements about the founding process; the agreement with the first three is very high; whereas the last one is neglected. This implies that the business ideas were flexible and adapted to financial conditions and opportunities.

Founding process (1=strongly disagree, 7=strongly agree)	mean
I analyzed long run opportunities and selected what I thought would provide the best returns.	6,75
I allowed the business to evolve as opportunities emerged.	6,5
I was careful not to risk so much money that the company would be in real trouble financially if things did not work out.	6,25
The product/service that I now provide is essentially the same as originally conceptualized.	3,5

Table 5 Founding process

### 5.4. The family business

Of the 853 students that study in China, 65 have parents that are currently self-employed (father, mother or both). This opens up an additional career path for these students. Besides becoming employees or founders, they can pursue a career as successors in the family business. The following figure displays the intention of the 65 students to become successors:

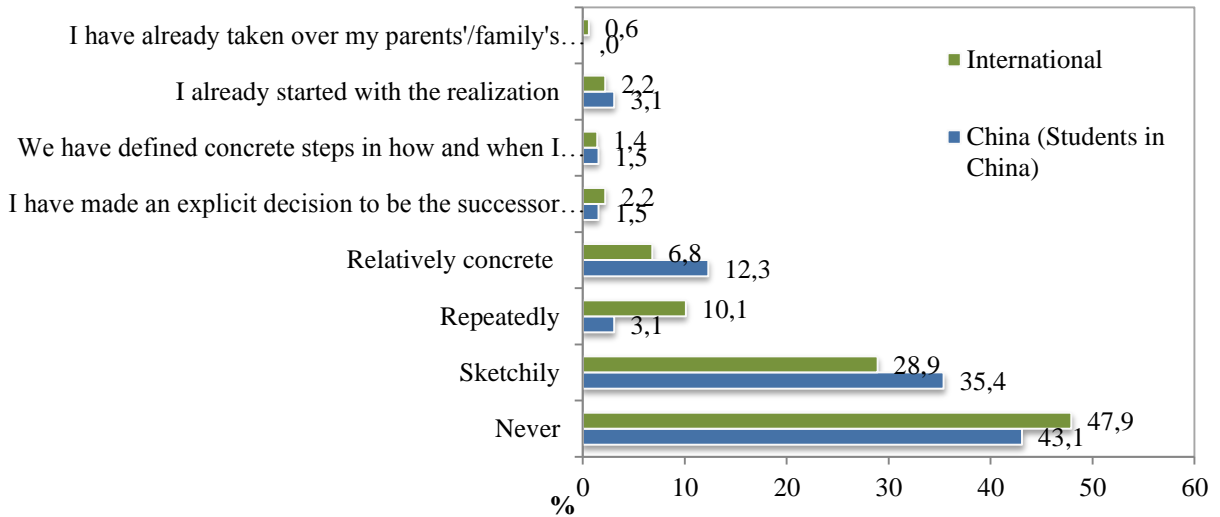


Figure 24 Family business: Potential successors

The great share of students (78,5%) does not intent to work in the parents business. 14 of the students have more concrete plans to pursue a career as successor; however no one has already taken over the family business.

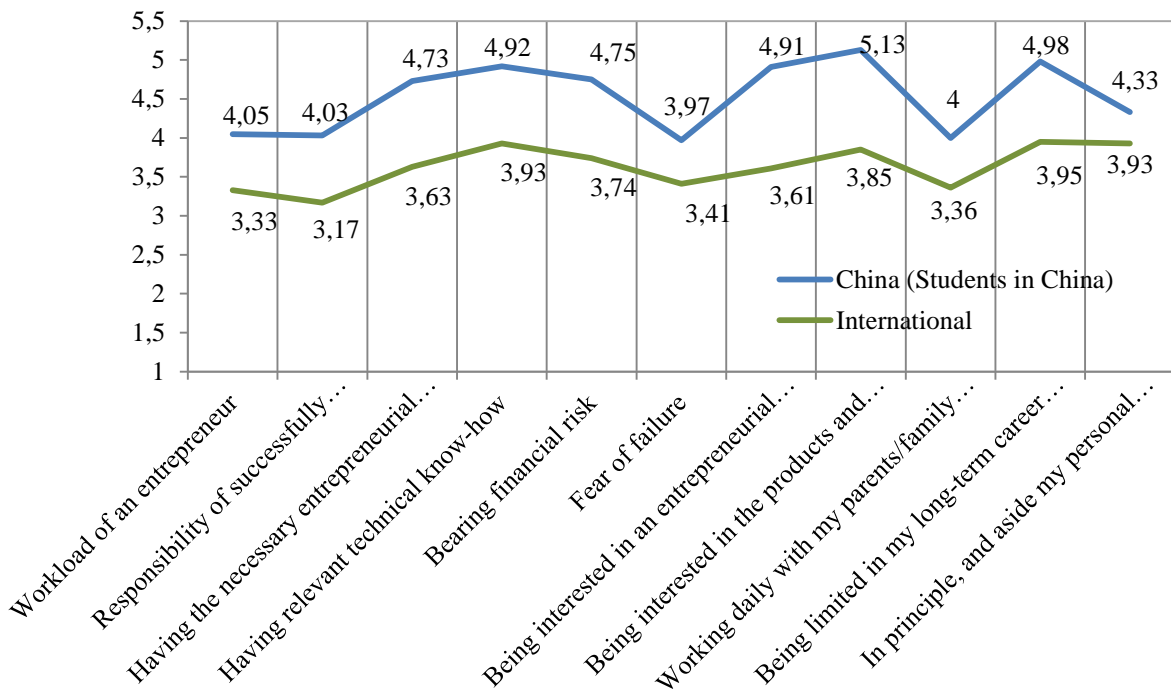


Figure 25 Barriers to succession

Reasons for the cautious decision to work in the family business are various. Figure 25 lists some possible reasons (scale: 1=not at all, 7=very much); among the most common ones are: Not being interested in the product or service (5,13), being limited in the long-term career (4,98) and not being interested in an entrepreneurial job in general (4,91). Fear of failure is the least barrier to succession (3,97). The barriers to succession are ranked higher in China than in the international sample.

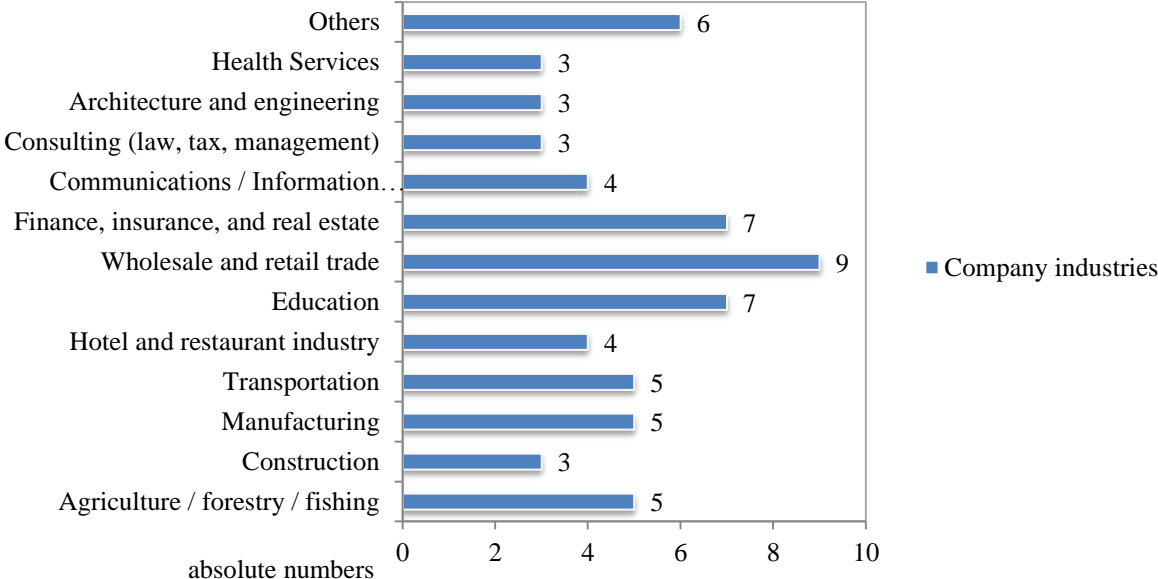


Figure 26 Family business: Industries

Not being interested in the product or service (the highest barrier to succession mentioned above) might indicate that the data is biased in one industry. However, Figure 26 shows an almost even frequency distribution of the family businesses among different industries. This implies that one has to search somewhere else for the main reason for the low succession rate.

## 6. Entrepreneurial Index

The index is used to measure the entrepreneurial spirit of students and to compare it on an international level. The calculation of the index is based on two questions; one is analyzed in chapter 5.1 (Figure 18), the other in chapter 5.2 (Figure 19). The answers to these questions are weighted to calculate the entrepreneurial power (Appendix 3 & 4).

	<b>Country</b>	<b>Index value</b>	<b>N</b>
1	United Kingdom	16,46	313
2	Finland	15,44	361
3	Portugal	15,06	406
4	Estonia	14,95	842
5	Ireland	14,87	166
6	France	14,10	743
7	Argentina	14,05	1.011
8	Mexico	13,85	397
9	South Africa	13,41	492
10	Liechtenstein	13,32	129
11	Brazil	13,09	13.352
<b>12</b>	<b>China</b>	<b>12,93</b>	<b>349</b>
13	Chile	12,79	741
14	Singapore	12,37	929
15	Netherlands	12,30	4.218

Table 6 Entrepreneurial Index

The entrepreneurial index of the international sample is 12,39; with an index of 12,93 the entrepreneurial spirit of students in China is slightly better than the average. In the ranking of all 26 countries China comes in 12<sup>th</sup>.

## 7. Summary and conclusion

The last paragraph contains a summary of all findings in the report and based on that derives conclusions for different target groups.

The GUESSS survey in China provides us with some interesting **findings**:

- (Career choice) Right after the completion of studies most students in China prefer to work for a large firm. After 5 years, the wish to work for a large company declines and foundation of an own firm is mentioned as the most preferred option.
- (Career choice) The change over time from ‘working in a large firm’ to ‘foundation of an own company’ is also observable in the international sample.
- (Career choice) Almost the same shares of Bachelor and Master students intend to become employees or founders.
- (Career choice) Most of the business science students want to become employees, closely followed by natural science students. Five years after the completion of studies the biggest part of the business science students intend to become founders. The other fields of study show a similar trend.
- (Career choice) Succession: It seems that students first try to gain experiences in other companies before working in the family firm (increase after 5 years).
- (University Context) The Chinese universities are practically oriented, with resources and the business plan contest as the leading offers. In the international sample the offers follow a rather theoretical approach.
- (Motivation) The overall ranking of motivations follows a similar trend among the different career choices of students and also among the different samples. All given motivations – besides ‘roles’ - are considered to be important.
- (Family background) Parents of students in China are rarely self-employed. The numbers are well below the international sample.
- (Family background) For students in China and abroad the family plays a more important role than in the international sample.
- (University Context) When certain entrepreneurship classes were not offered, students indicated in most cases that they would be interested. The satisfaction with the existing offers was slightly positive.
- (University environment) The positive effect of the entrepreneurship classes in China is rather low. The existence of an entrepreneurial climate at university and entrepreneurial minded classmates was ranked in a similar indifferent way.
- (Intentional founders) Intentional founders account for 41% of the students in China. Most of them thought of a first business idea, only a few planned more concrete steps.

- (Intentional founders) The top 3 industries that students in China plan to be active in are manufacturing, wholesale, and IT. (In the international sample: 1. Manufacturing, 2. Consulting, 3. Architecture).
- (Intentional founders) Family support as a potential business resource does not seem to play an important role. For students in China family support is ranked higher than in the international sample.
- (Intentional founders) The majority of students in China prefer to found a company with one to three partners. In the international sample working alone or with only one partner is chosen by the majority of students.
- (Intentional founders) Barriers on the way to found a company are perceived to be higher in China ( $>4$ ) than internationally ( $\leq 4$ ). Financial capital is named to be the highest barrier, although 60% of the students in China indicated that financial support is offered by the university.
- (Family business) The biggest part of students in China (78,5%) with self-employed parents does not intend to work in the family business.
- (Family business) Barriers to succession are numerous and ranked essentially higher in China ( $>4$ ) than in the international sample ( $<4$ ).
- (Entrepreneurial Index) The entrepreneurial index displays that the entrepreneurial spirit of students in China is slightly higher than the international average.

**Conclusions** that can be drawn from these findings are:

#### *Politics*

The entrepreneurial spirit of students in China is higher than average compared to the international sample. However most of the students prefer to start their careers as employees and switch to an entrepreneurial career later on. A further decrease in the barriers to foundation might help to support an earlier action and smooth out the great differences between career choices right after studies and in five years.

#### *University*

Universities in China could widen their entrepreneurship offers and include a more theoretical foundation. Also, the quality of the courses should be tested and ensured. Students in China are well informed about the course offerings, but the attendance rate is lower than international rates. An entrepreneurial spirit and the usage of university resources (e.g. seed funding) should be more encouraged.

#### *Students*

Students are encouraged to develop and support an entrepreneurial climate at university. The creation of an entrepreneurial dynamic will help to find more like minded students, increase the offer of classes and decrease barriers of foundation in the future. Students are also encouraged to follow their entrepreneurial intentions, also five years after they finished their studies.

### *Research*

The survey shows that students in China differ from the international sample in many ways. To explore and analyze these differences further research is necessary. To gain a better understanding of the transition process and development in China longitudinal data is needed as well. Besides the cultural differences, further research can be conducted, for example in the field of succession or education.

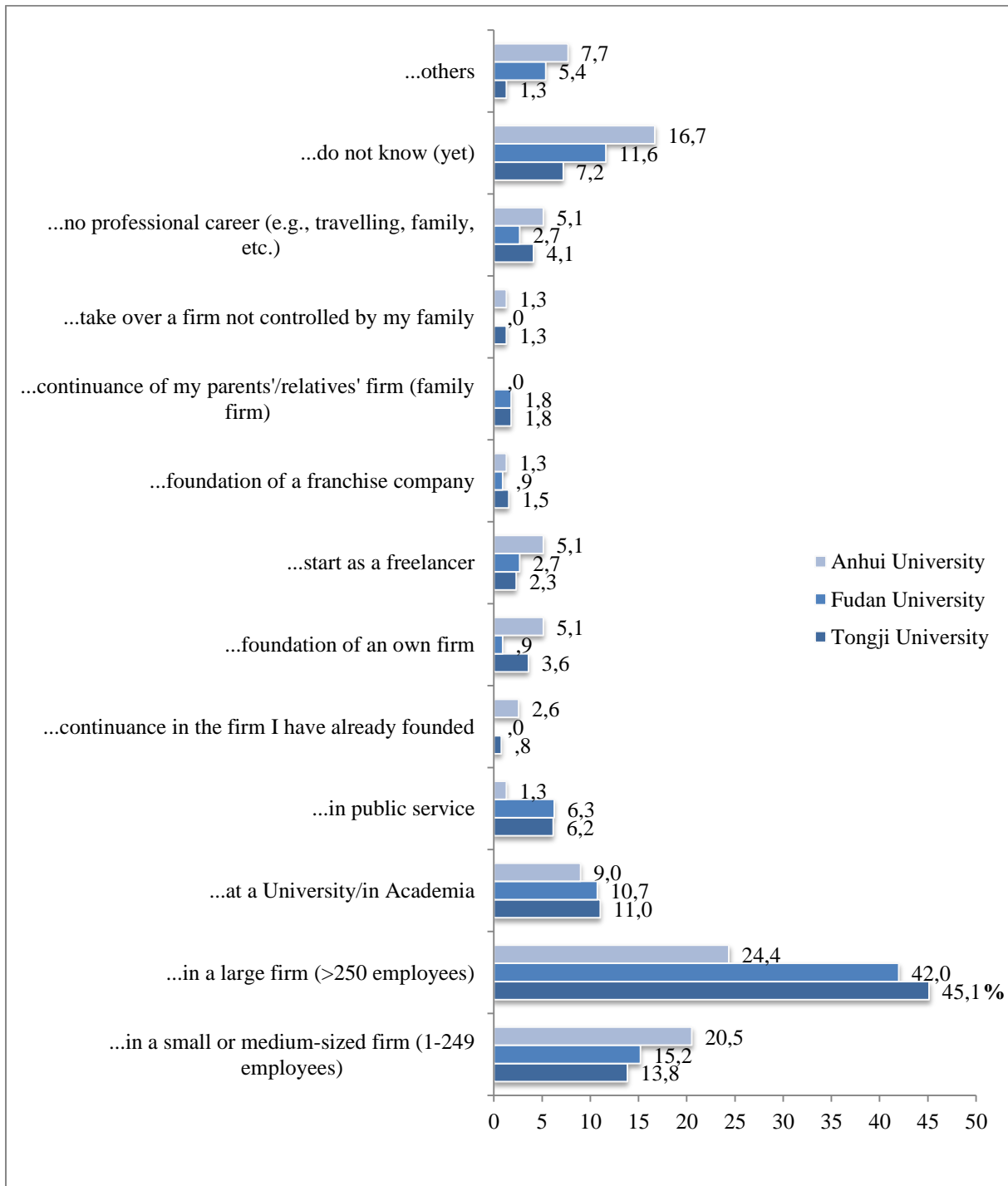
China's first participation in the GUESSS project showed very interesting results and practical implications for various groups of people. The international comparison reveals that China's entrepreneurial spirit is already above average. As China is still a transition economy it will be exciting to see how the future development looks like.

We are looking forward to the next GUESSS survey!

## Appendices

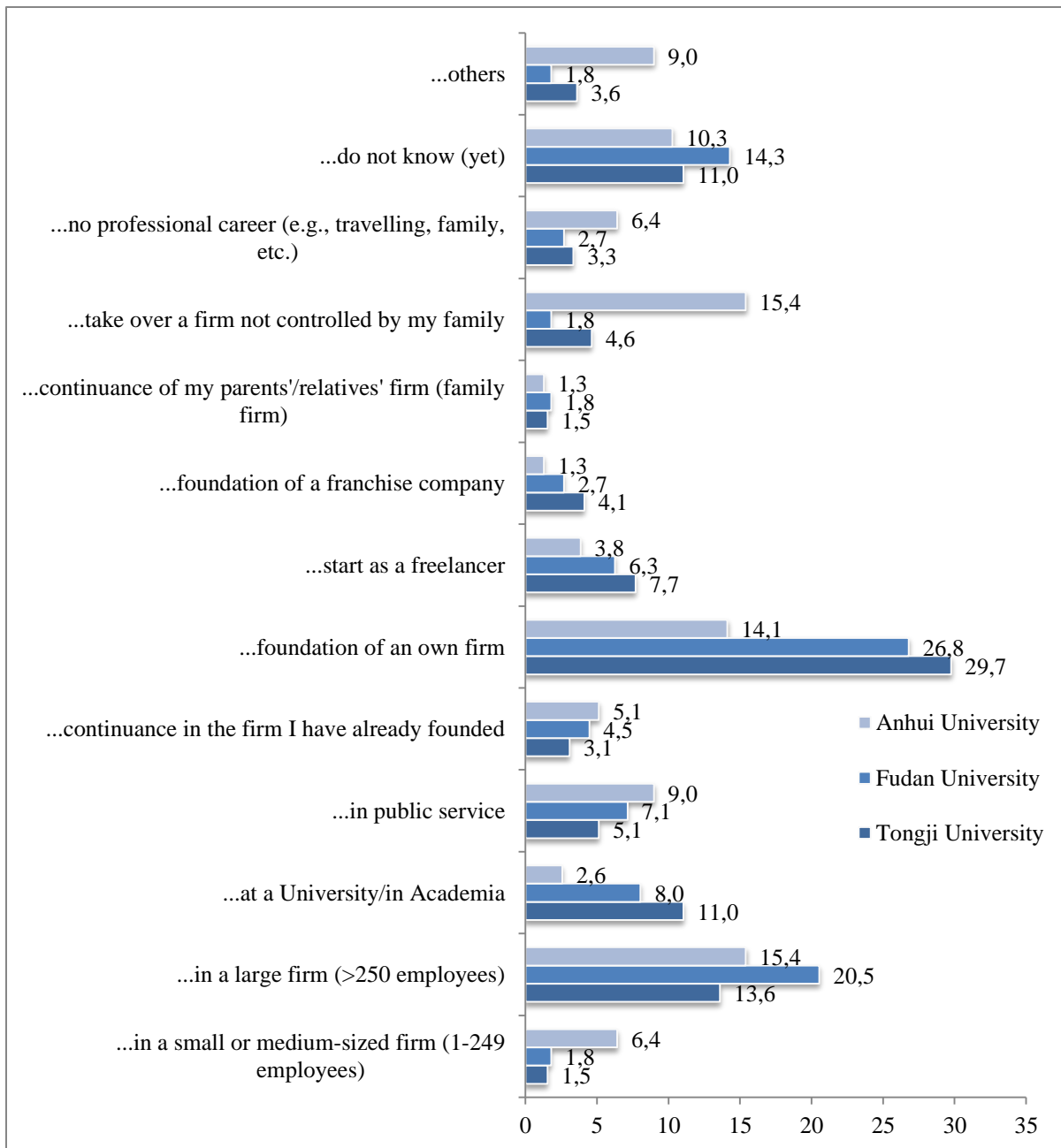
### Career choices of students of the different universities

*Right after studies:*



Appendix 1 Career choice: University comparison (right after studies)

*5 years after studies:*



Appendix 2 Career choice: University comparison (5 years after studies)

## Entrepreneurial Index

### First Question

(see also Chapter 5.1, Figure 18)

Thoughts about founding a company:	Weighting
Never	1
Sketchily	1

Repeatedly	3
Relatively concrete	3
I have made an explicit decision to found a company	5
I have a concrete time plan when to do the different steps for founding	7
I have already started with the realization	7
I am already self-employed in my own founded firm	8
I have already founded more than one company, and am active in at least one of them	10

Appendix 3 Entrepreneurial Index Q1

*Second Question*

(see also chapter 5.2, Figure 19)

<b>Steps to found a company</b>	<b>Weighting</b>
Nothing done so far	1
Thought of first business ideas	3
Formulated business plan	5
Identified market opportunity	5
Looked for potential partners (e.g., fellow students)	5
Purchased equipment	7
Worked on product development	7
Discussed with potential customers	7
Asked financial institutions for funding	8
Decided on date of foundation	10

Appendix 4 Entrepreneurial Index Q2

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