GUESSS

Global University Entrepreneurial Spirit Students' Survey

Entrepreneurial Intentions and Activities of Students across the World

International report of the Global University Entrepreneurial Spirit Students' Survey project (GUESSS 2011)

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The Swiss Research Institute of Small Business and Entrepreneurship at the University of St.Gallen (KMU-HSG) is dedicated to small- and medium-sized enterprises and entrepreneurship for decades. The main activities are research, teaching, and consulting and services (executive education) in the context of entrepreneurship, SME, and family businesses.

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1 Preface

The economic and social relevance of entrepreneurship in general and new ventures in particular is well-established across the world. Students, as they could be the entrepreneurs of tomorrow, have attracted considerable scholarly and public attention in the last decades. Despite strong research efforts in the past, many questions are still not sufficiently answered. Which individual, societal, family- and university-related factors enhance students' intention to found their own company? How do students' entrepreneurial intentions and activities compare across a multitude of nations? Are there globally applicable best practices?

To generate unique insights and contributions that address these gaps, it is thus imperative to further investigate students' entrepreneurial intentions, activities and their antecedents on a global level. This is the overarching goal of the GUESSS research project (Global Universiy Entrepreneurial Spirit Students' Survey). At GUESSS, we not only focus on new venture creation, but we take a broader perspective to include different interesting variations of entrepreneurial intentions and activities. For instance, we are interested in students' intention to take over an existing company or to succeed in their parents' family firm.

This report presents the results and insights of the 2011 edition of the GUESSS project on the global level. In Spring 2011, a large-scale quantitative survey was conducted in 26 different countries, addressing more than 1 Million students from 489 Universities, leading to a data set with more than 93'000 responses (N=93’265).

The main focus of this report is on presenting and comparing the results of the different countries on the macro level. For more micro-level country-specific insights we kindly refer to the national reports that are written for all 26 participating countries.

At this point we would like to thank all the country delegates and their teams, Universities, and of course the students for their invaluable effort und support. Without them, GUESSS would not have been possible in the current form.

We are convinced that GUESSS in general and this report in particular adds valuable insights to students, University representatives, researchers, politics and society. We are looking forward to your feedback and already to the next edition of GUESSS in 2013.

Yours sincerely,

Dr. Philipp Sieger
Prof. Urs Fueglistaller
Prof. Thomas Zellweger
KMU-HSG / CFB-HSG

2 Introduction

2.1 Starting point and aims of GUESSS[1]

The international research project GUESSS stands for "Global University Entrepreneurial Spirit Students´ Survey" and has been founded at the Swiss Research Institute of Small Business and Entrepreneurship at the University of St.Gallen (KMU-HSG) in 2003. Until 2006 it was labeled ISCE (International Survey on Collegiate Entrepreneurship). Its research focus is on entrepreneurial attitudes, intentions, and activities of students on a global level.

With every of the now five data collection waves, GUESSS has grown and has become more internationally. In 2011, 26 countries participated.

Based on the experiences gained since 2003, GUESSS 2011 was conducted to extend the current amount of knowledge in a scientifically sound and practitioner-oriented way.

The aims of GUESSS can be summarized as follows:

- Systematic and long-term observation of entrepreneurial intentions and activities of students
- Identification of antecedents and boundary conditions in the context of new venture creation and entrepreneurial careers in general
- Observation and evaluation of Universities' activities and offerings related to the entrepreneurial education of their students

GUESSS intends to create value for different stakeholders:

- Participating countries generate insights on their respective basic conditions for entrepreneurship in general
- They also learn more about the entrepreneurial power of their students
- Participating Universities are enabled to assess the quantity and quality of their offerings in the context of entrepreneurship
- Politics and public are sensitized for entrepreneurship in general and new venture creation in particular, and hopefully identify need for action
- Students can benefit from the implementation of respective actions in the long term

[1] For more information about GUESSS, such as the different reports and other publications, we kindly refer to the GUESSS website: http://www.guesssurvey.org

2.2 Theoretical framework

The theoretical foundation of GUESSS is the Theory of Planned Behavior (Ajzen, 2002; Fishbein & Ajzen, 1975). According to that theory, the intention to exhibit a specific kind of behavior is influenced by a number of factors, such as attitude toward the behavior, subjective norms, and perceived behavioral control. In the context of GUESSS, we investigate entrepreneurial intentions of University students, for instance the intention to found a company, to take over an existing one, or to join the parents' family firm. An important boundary condition here is the University context, which we investigate with specific attention. In addition, we also investigate personal background, motives, and family background as antecedents.

The underlying theoretical framework is illustrated by the following figure.

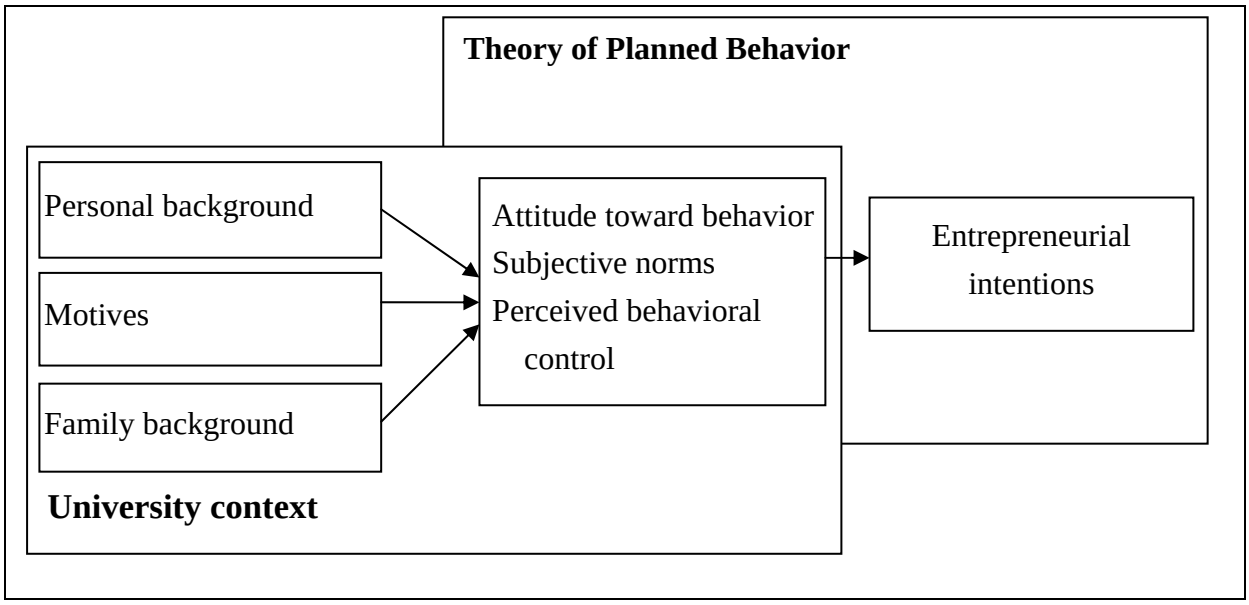

Figure 1: Theoretical framework of GUESSS 2011

2.3 Project organization

The GUESSS project is organized and led by the KMU-HSG and the CFB-HSG at the University of St.Gallen. The responsible project manager is Dr. Philipp Sieger. The supervisory board consists of Prof. Urs Fueglistaller (President), Prof. Thomas Zellweger, Prof. Norris Krueger, and Dr. Frank Halter.

Every participating country is represented by one representative/delegate, who coordinates data collection at the different Universities in the respective country.

3 International data collection

As mentioned before, 26 countries joined GUESSS 2011. In every country, an email with a short introduction of the project and a link to the online survey was sent to students at the participating Universities. Data was collected and prepared centrally.

3.1 Country representatives

The following table lists all country representatives of GUESSS 2011.

#	Country	Representative	University
1	Argentina (ARG)	Prof. Silvia Carbonell	IAE Business School
2	Austria (AUT)	Prof. Dr. Norbert Kailer	Johannes Kepler University Linz
3	Belgium (BEL)	Prof. Dr. Hans Crijns	Vlerick Leuven Gent Management School
4	Brazil (BRA)	Prof. Edmilson Lima	UNINOVE - Universidade Nove de Julho
5	Chile (CHI)	Prof. German Echecopar	Universidad Adolfo Ibanez, Santiago
6	China (CHN)	Prof. Zheng Han	Tongji University (CDHK), Shanghai
7	Estonia (EST)	Prof. Dr. Urve Venesaar	Tallinn University of Technology
8	Finland (FIN)	Prof. Asko Miettinen	Lappeenranta University of Technology
9	France (FRA)	Prof. Dr. Alain Fayolle Janice Byrne	EM Lyon Business School
10	Germany (GER)	Dr. Heiko Bergmann	University of Hohenheim
11	Greece (GRE)	Prof. Katerina Sarri	University of Western Macedonia
12	Hungary (HUN)	Prof. Dr. Laszlo Szerb Dr. Szilveszter Farkas	University of Pecs, Faculty of Business & Economics Szechenyi Istvan University, Györ
13	Ireland (IRE)	Dr. Naomi Birdthistle Dr. Briga Hynes	University of Limerick
14	Japan (JAP)	Prof. Noriko Taji	Hosei University
15	Liechtenstein (LIE)	Prof. Dr. Urs Baldegger	Hochschule Liechtenstein
16	Luxembourg (LUX)	Prof. Pol Wagner	Institut Universitaire International Luxembourg
17	Mexico (MEX)	Prof. Dr. Elisa Cobas-Flores	EGADE Business School, Tecnologico de Monterrey
18	Netherlands (NED)	Prof. Roy Thurik Dr. Joern Block Dr. Katrin Burmeister Dr. Ingrid Verheul	Erasmus University, Rotterdam
19	Pakistan (PAK)	Prof. Najaf Khan	GC University, Lahore
20	Portugal (POR)	Prof. Joao Leitao Prof. Rui Baptista	Technical University of Lisbon Instituto Superior Tecnico
21	Romania (ROM)	Dr. Lilian Ciachir	University of Bucharest
22	Russia (RUS)	Prof. Galina Shirokova Alexander Kulikov	St.Petersburg State University Graduate School of Management
23	Singapore (SIN)	Prof. Dr. Wong Poh Kam	National University of Singapore
24	South Africa (RSA)	Dr. Suzette Viviers	Stellenbosch University
25	Switzerland (SUI)	Dr. Philipp Sieger Prof. Rico Baldegger	University of St.Gallen (KMU/CFB-HSG) HEG Fribourg
26	UK	Prof. Robert Blackburn	Kingston University, Kingston

Table 1: List of country representatives

3.2 Universities and respondents

The following table lists all countries, number of Universities, total number of addressed students, received responses, and response rates.

#	Country	# of Universities	# of addressed students	# of reponses	Response rate
1	Argentina	23	n.a.	1'660	n.a.
2	Austria	17	144'700	4'553	3.1
3	Belgium	11	n.a.	188	n.a.
4	Brazil	43	250'000	29'186	11.7
5	Chile	5	15'544	1'244	8.0
6	China	22	26'950	868	3.2
7	Estonia	21	34'070	1'874	5.5
8	Finland	12	29'313	1'437	4.9
9	France	17	15'930	1'498	9.4
10	Germany	46	297'373	12'469	4.2
11	Greece	7	14'000	454	3.2
12	Hungary	23	70'717	5'677	8.0
13	Ireland	8	9'705	332	3.4
14	Japan	4	4'200	561	13.4
15	Liechtenstein	1	580	220	37.9
16	Luxembourg	2	4'948	444	9.0
17	Mexico	3	2'400	556	23.2
18	Netherlands	56	227'568	13'121	5.8
19	Pakistan	12	n.a.	321	n.a.
20	Portugal	14	n.a.	1'020	n.a.
21	Romania	33	n.a.	849	n.a.
22	Russia	23	7'840	2'882	36.8
23	Singapore	8	66'000	2'391	3.6
24	South Africa	15	16'670	697	4.2
25	Switzerland	44	92'738	8'115	8.8
26	UK	19	43'432	648	1.5
	TOTAL	489	1'374'678	93'265	6.3

Table 2: Countries, Universities, and Respondents

3.3 Sample characteristics

3.3.1 Gender and age

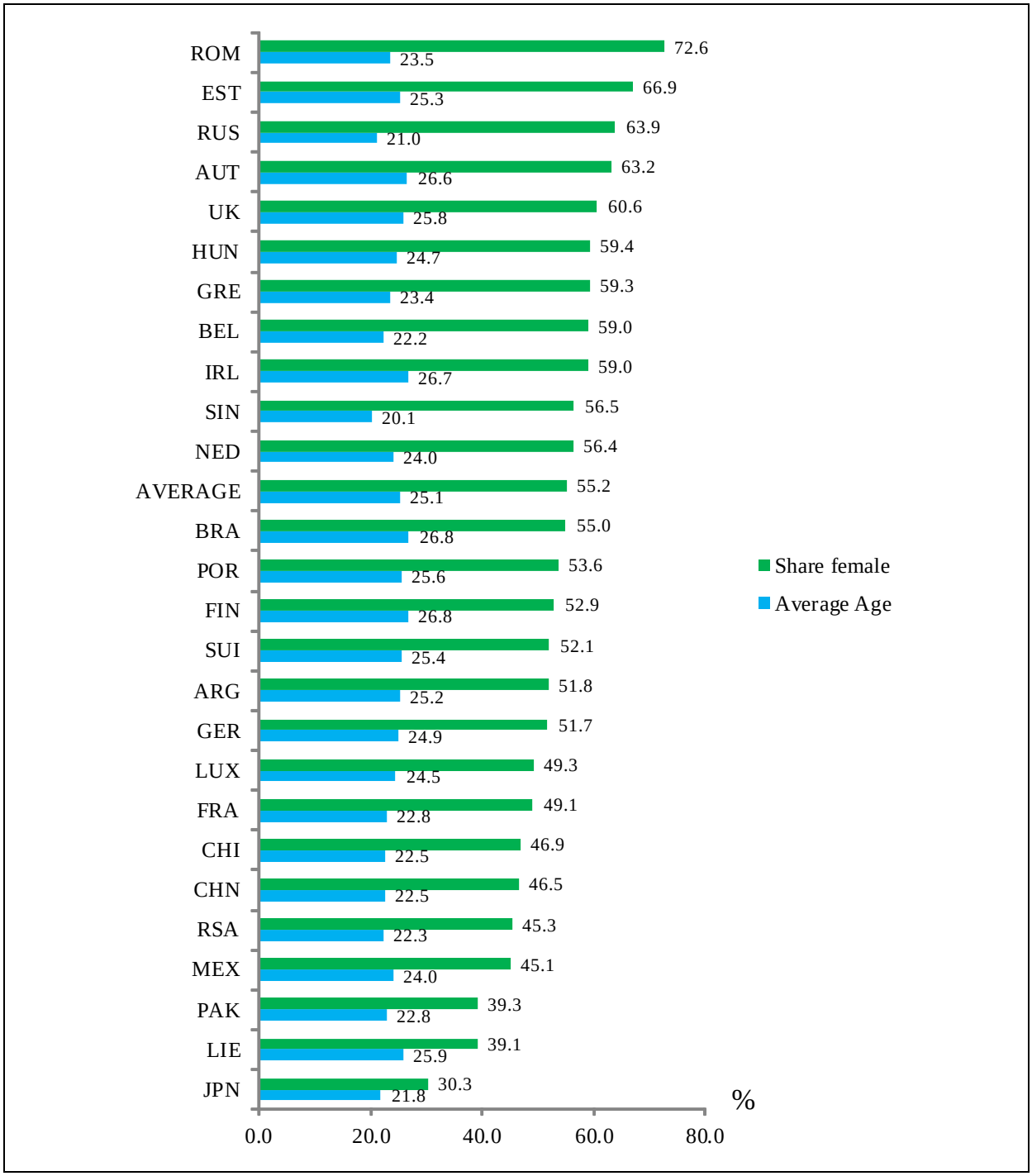

Figure 2: Age and gender of respondents across countries

We find that the average age of students varies between approximately 20 and 27 years across countries. This is most likely to be due to either over- or underrepresentation of undergraduate and graduate students or to differences in educational systems. The age range as well as the total average of 25 years is quite similar to GUESSS 2008. Regarding gender, we also find differences between countries, but a reasonable average value of 55.2% females.

3.3.2 Level of studies

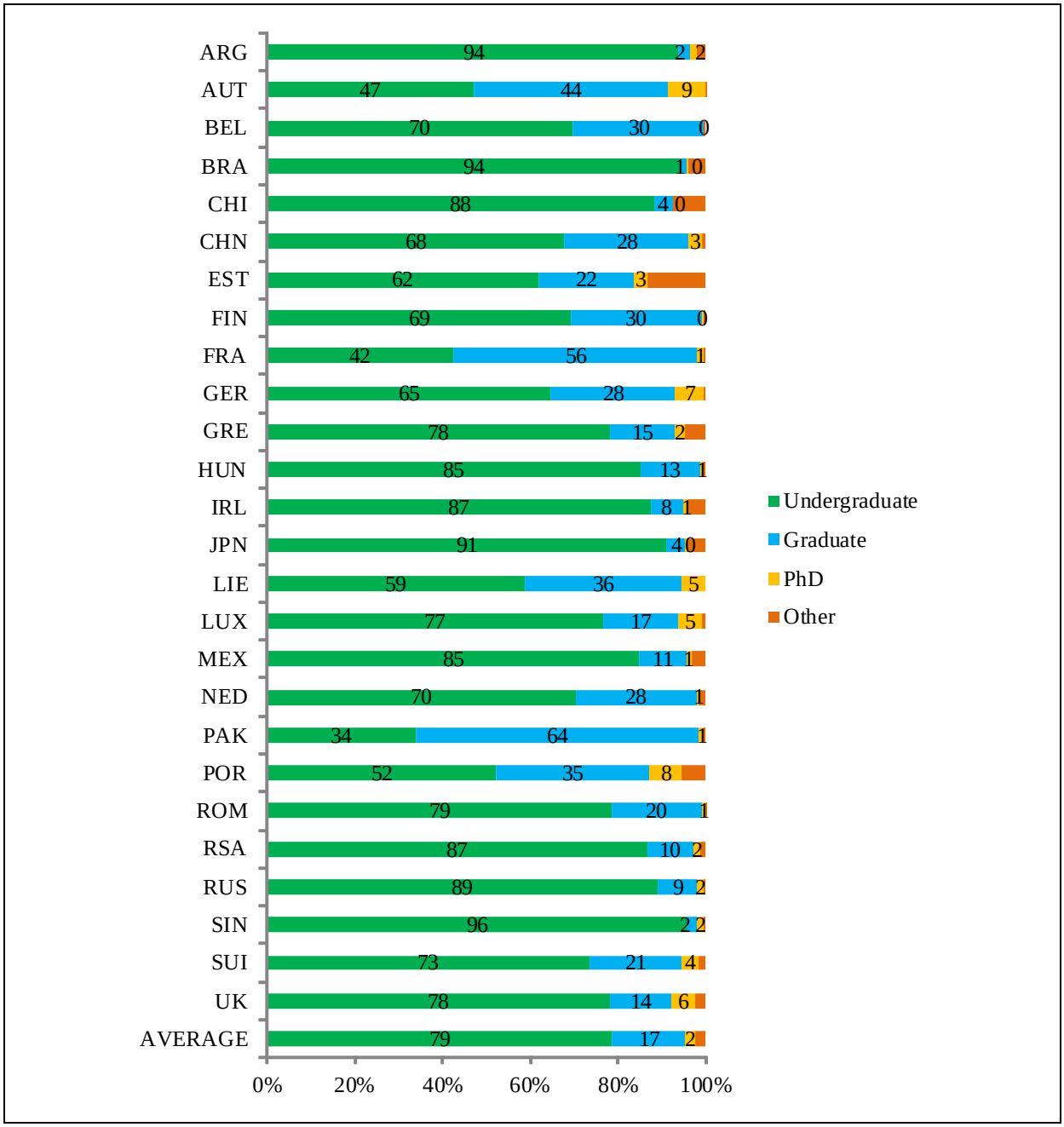

Figure 3: Level of studies across countries

The preceding figure shows that the share of undergraduate and graduate students varies considerable across countries. In Singapore, Brazil and Argentina the share of undergraduates exceeds 90%. In contrast, the samples from Pakistan, France and Austria consist of more than 40% graduate students. On average, more than three quarters are undergraduate students. With the exception of Estonia, the share of Postdocs and MBA students together is always 5% or less.[2]

[2] To increase readability, Postdocs and MBA students have been merged with the "others" group, and concrete numbers are not reported in the figure.

3.3.3 Field of study

Even more relevant than the level of studies is the field of studies, as we expect significant differences regarding entrepreneurial intentions depending on these categories. [3]

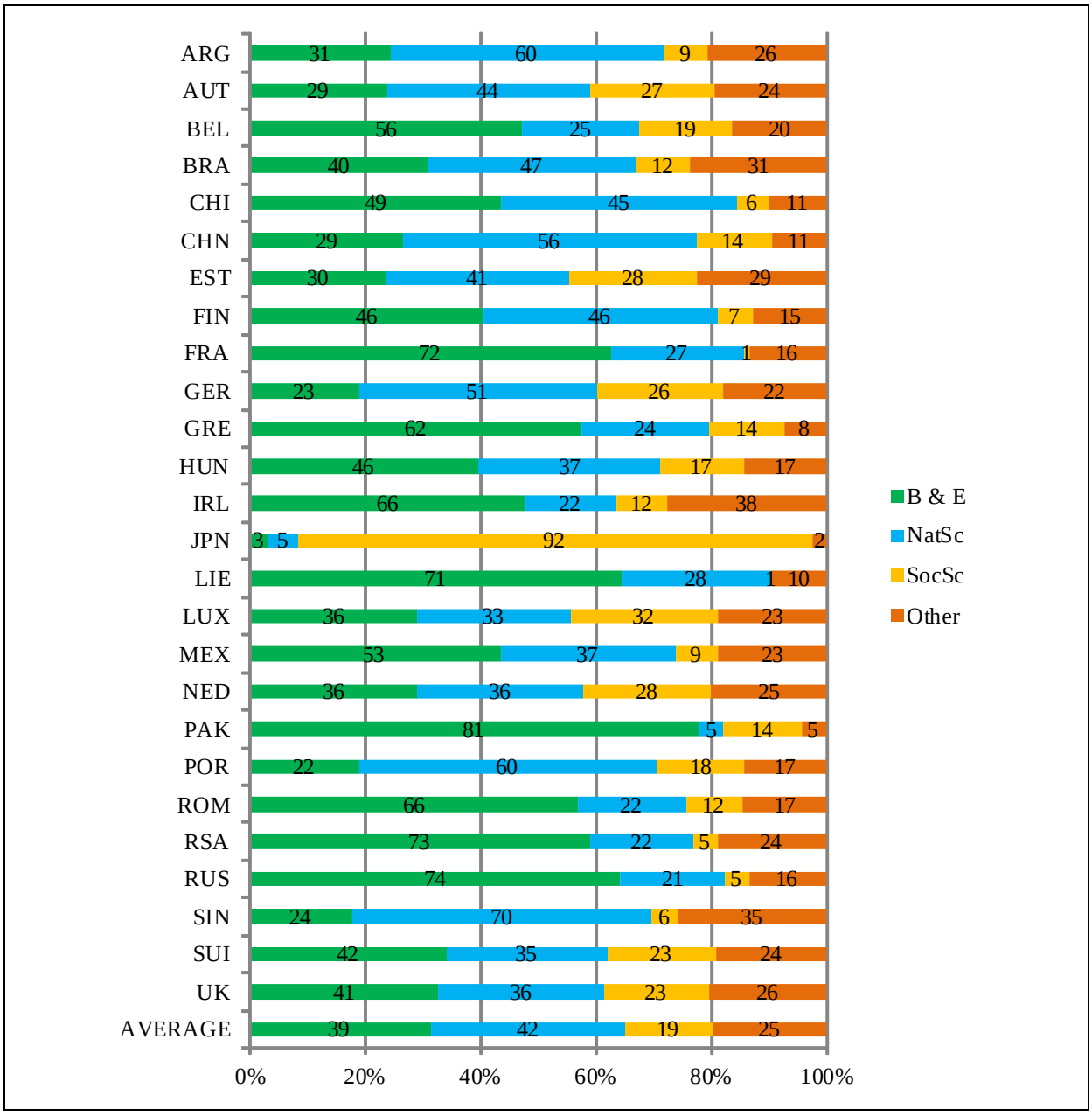

Figure 4: Fields of studies across countries

This figure also shows a high variation across countries. While business and economics students dominate in countries such as Russia, South Africa, Pakistan, and France, natural

[3] Business & Economics include: Management/business administration, economics
Natural Sciences include: Medicine/health sciences, mathematics / natural sciences, engineering, architecture, computer sciences, etc.
Social sciences include: Linguistics, cultural studies, religion, philosophy, psychology, education / pedagogy, sociology, etc.
Other include, among others: sports, art

science students are strongly represented in Argentina and Singapore. Japan is an outlier, with more than 90% social science students.

4 Entrepreneurial intentions

Career choice intentions in general and entrepreneurial intentions in particular are at the center of attention of GUESSS. We start on a very macro level and report the frequencies of the different career choice intentions directly after studies and 5 years after completion of studies in the following, without differentiating between countries for now.

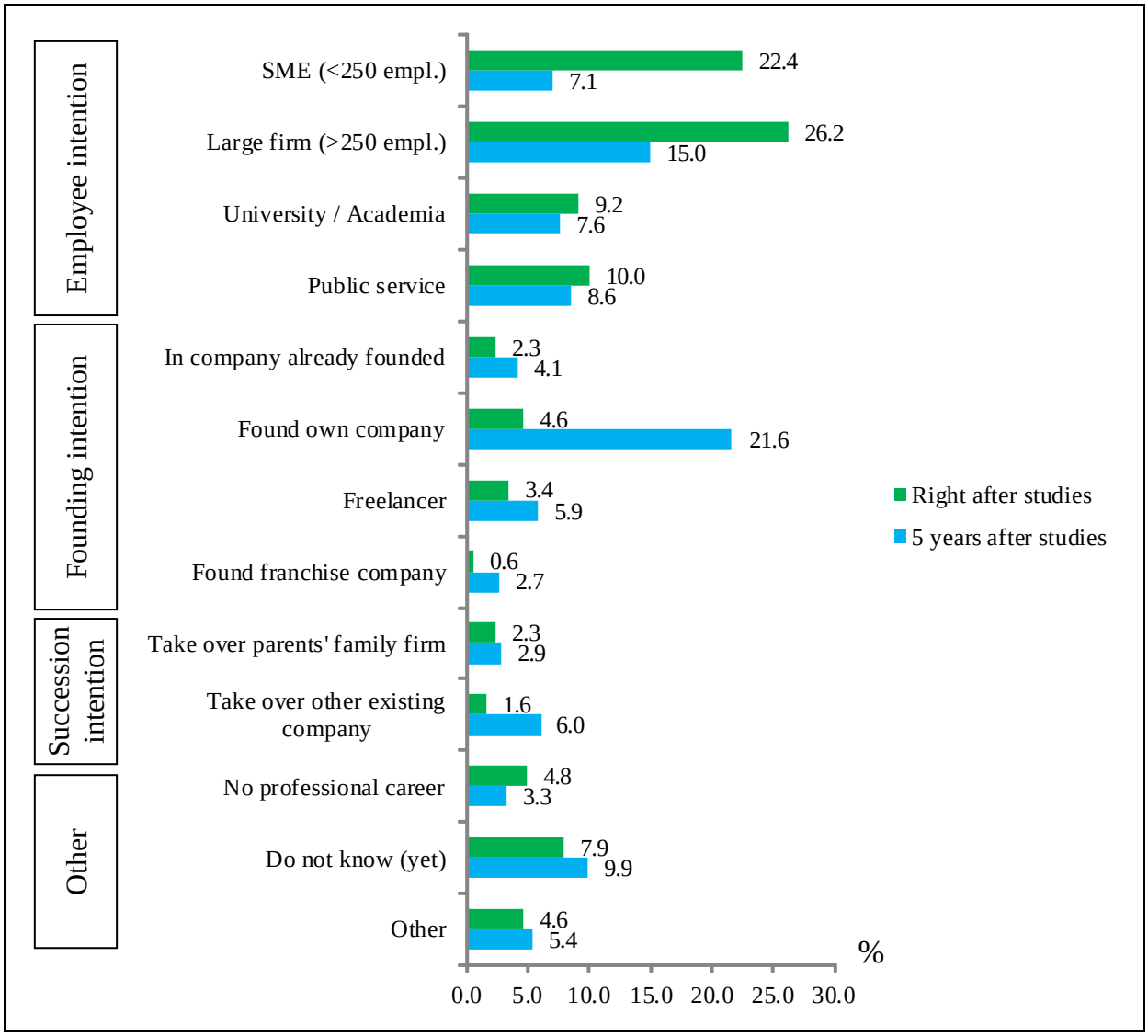

Figure 5: Career choice intentions on the global level in detail

These aggregated results show that most students worldwide prefer an organizational employment directly after studies. More than two third of them intend to start as an employee in either an SME, a large firm, in Academia, or in public service. Starting an own venture directly after studies is only the aim of less than 5% of all students. Five years after completion of studies, however, less than 40% strive for organizational employment. In contrast, 21.6% intend to found an own company in that time frame.

This tendency is visible more clearly when we categorize the different career choice intentions into the groups of employees[4], founders[5], successors[6], and others[7], as illustrated in the following figure.

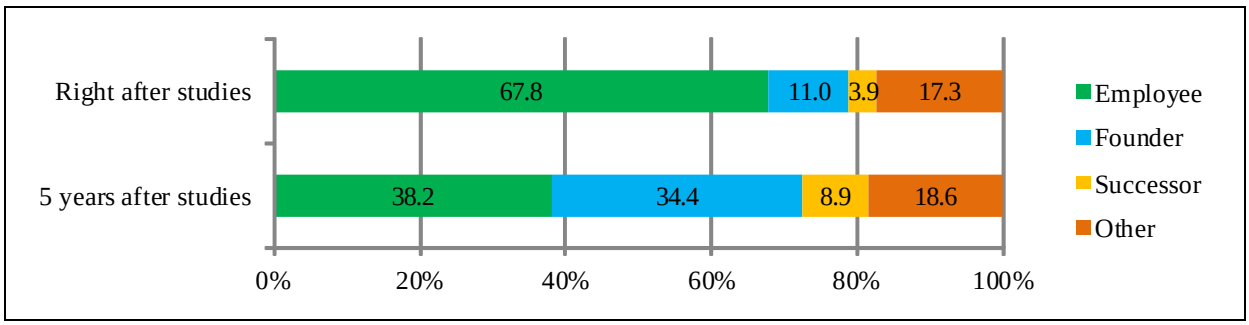

Figure 6: Career intention groups on the international level

The overall trend is obvious here. While most of the students strive for organizational employment right after studies, almost half of them intend to quit the employee career path within five years. Most of these temporary employees intend to found an own company, and the other part intends to take over either their parents' family firm or another already existing company.

As shown above, the share of the different study fields varies significantly across countries. To be able to extract meaningful and generalizable results, we investigate in the next step if there is a systematic difference in career choice intentions between these groups on the global level.

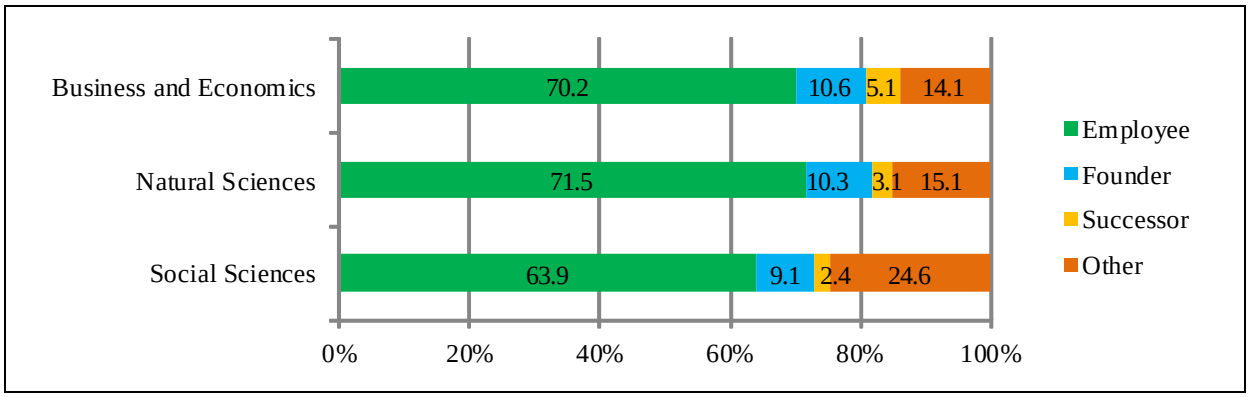

Figure 7: Career choice intentions according to study fields right after studies

Regarding career choice intentions right after studies, our data show that the intentions of business and economics and natural science students are very similar. Among social science students, however, the employee intention is significantly lower. In turn, the share of students in the "others" category is significantly higher.

[4] Includes: SME, large firm, University/Academia, and public service
[5] Includes: in company already founded, foundation own company, freelancer, and foundation franchise company
[6] Includes: take over parents' family firm and take over other existing company
[7] Includes: no professional career, do not know (yet), and other career paths

As the next figure shows, larger differences appear when referring to 5 years after studies.

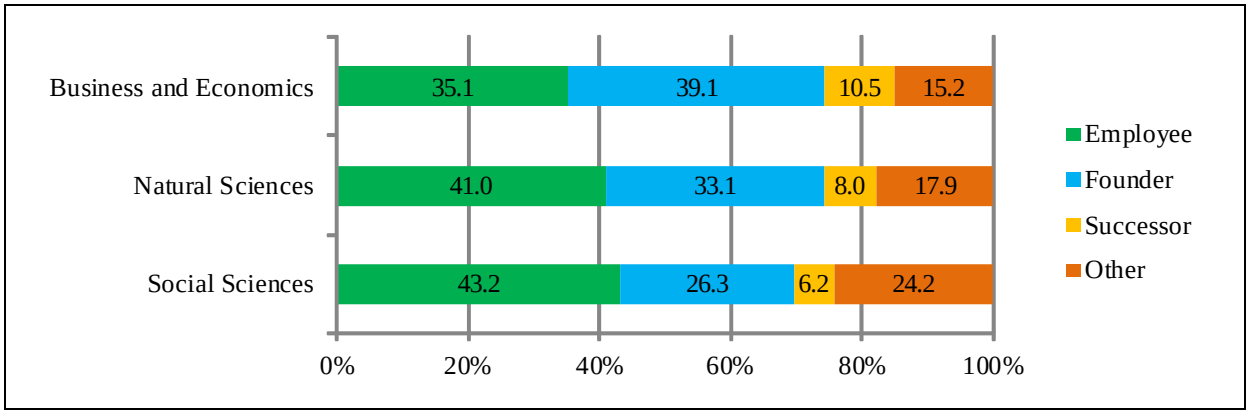

Figure 8: Career choice intentions according to study fields 5 years after studies

We see here that the share of intentional employees among business and economics students is now significantly lower than among natural science students. In turn, the group of intentional founders among business and economics students has grown significantly stronger. In addition, there is an obvious difference of both groups compared to social science students.

Summing up, we realize that the field of study is able to explain systematic differences in career choice intentions, and especially entrepreneurial intentions, both directly and 5 years after completion of studies. To achieve results as unbiased as possible, we thus split the analyses according to study fields when we enter the analysis on the country level. As mentioned, this is due to the fact that the study fields are represented differently in the GUESSS countries.

4.1 Intentions grouped by study field and countries

4.1.1 Business and economics students

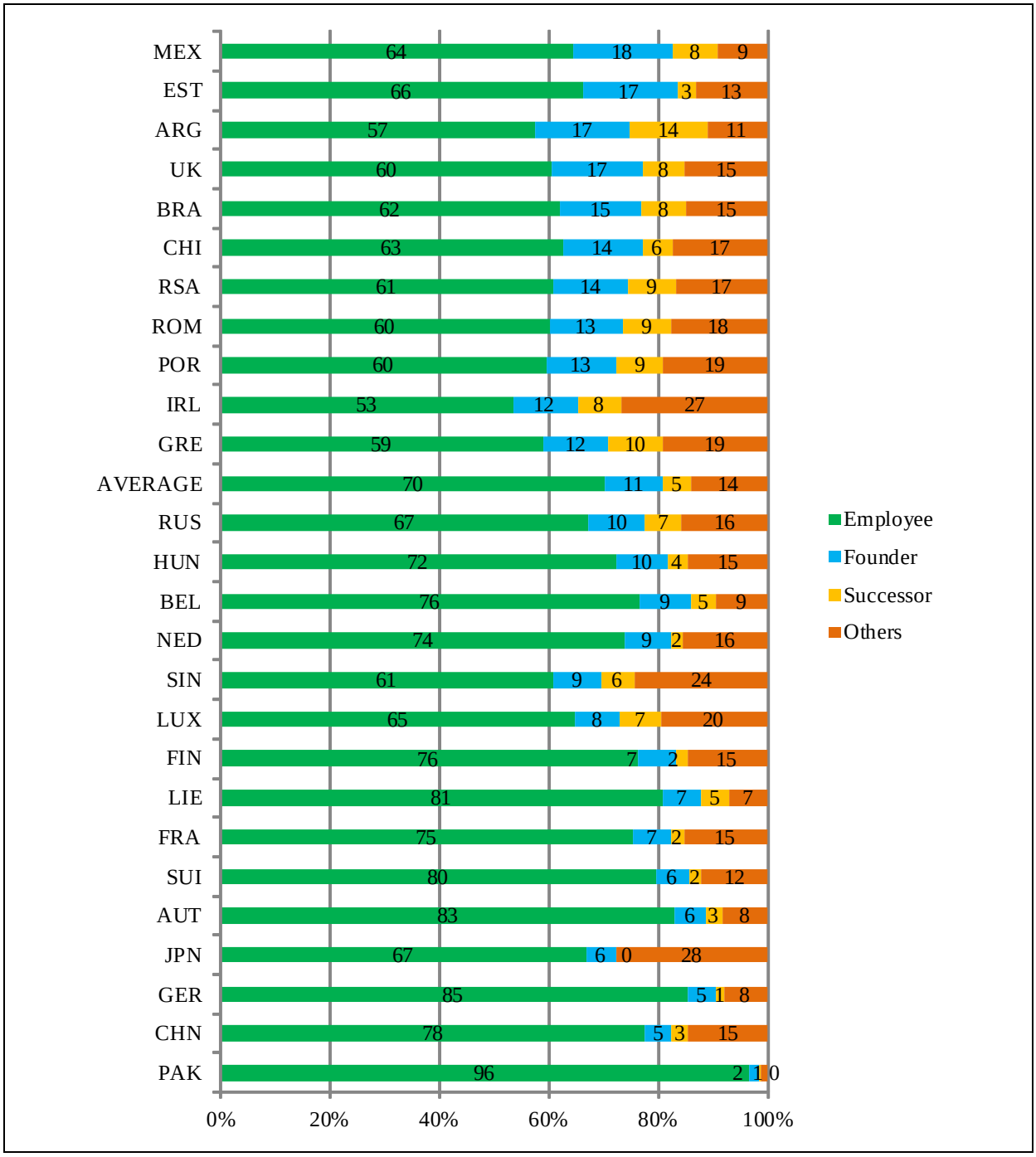

Figure 9: Business and economics students directly after studies

While business and economics students clearly prefer a career path as an employee directly after completing their studies, we identify differences across countries. Shares of more than 80% employee intention can be found in Austria, Germany, Liechtenstein, Pakistan, and Switzerland. The share of students who intend to found an own firm directly after studies is highest in Mexico, Estonia, Argentina, and the UK.

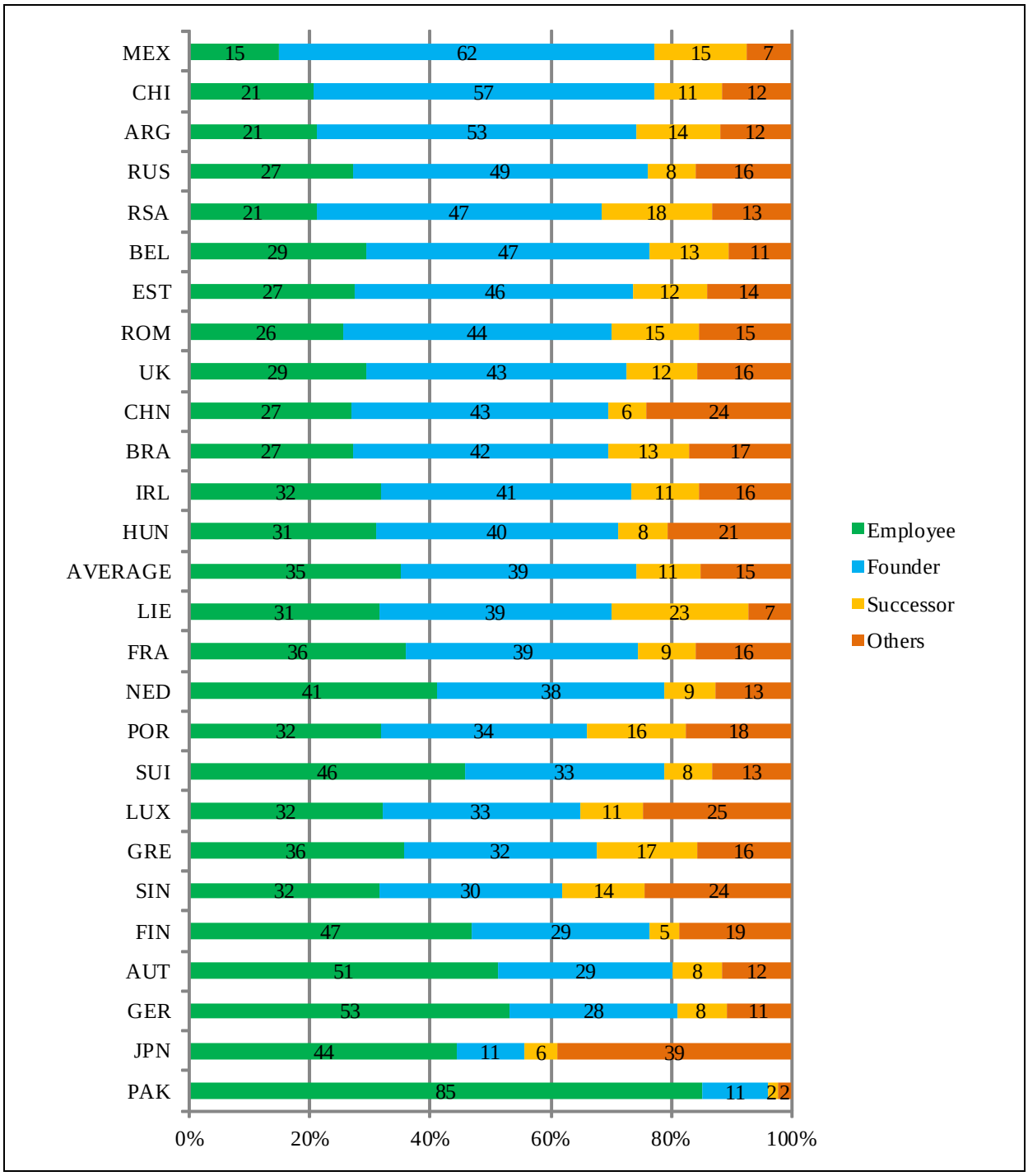

Figure 10: Business and economics students 5 years after studies

As seen previously, the share of intentional employees decreases 5 years after studies, and the share of intentional founders increases. In Austria, Germany and Pakistan still more than half of the business and economics students intend to become employees. In Mexico, China and Argentina on the other side, more than half of the students intend to found an own firm 5 years after they leave University.

4.1.2 Natural science students

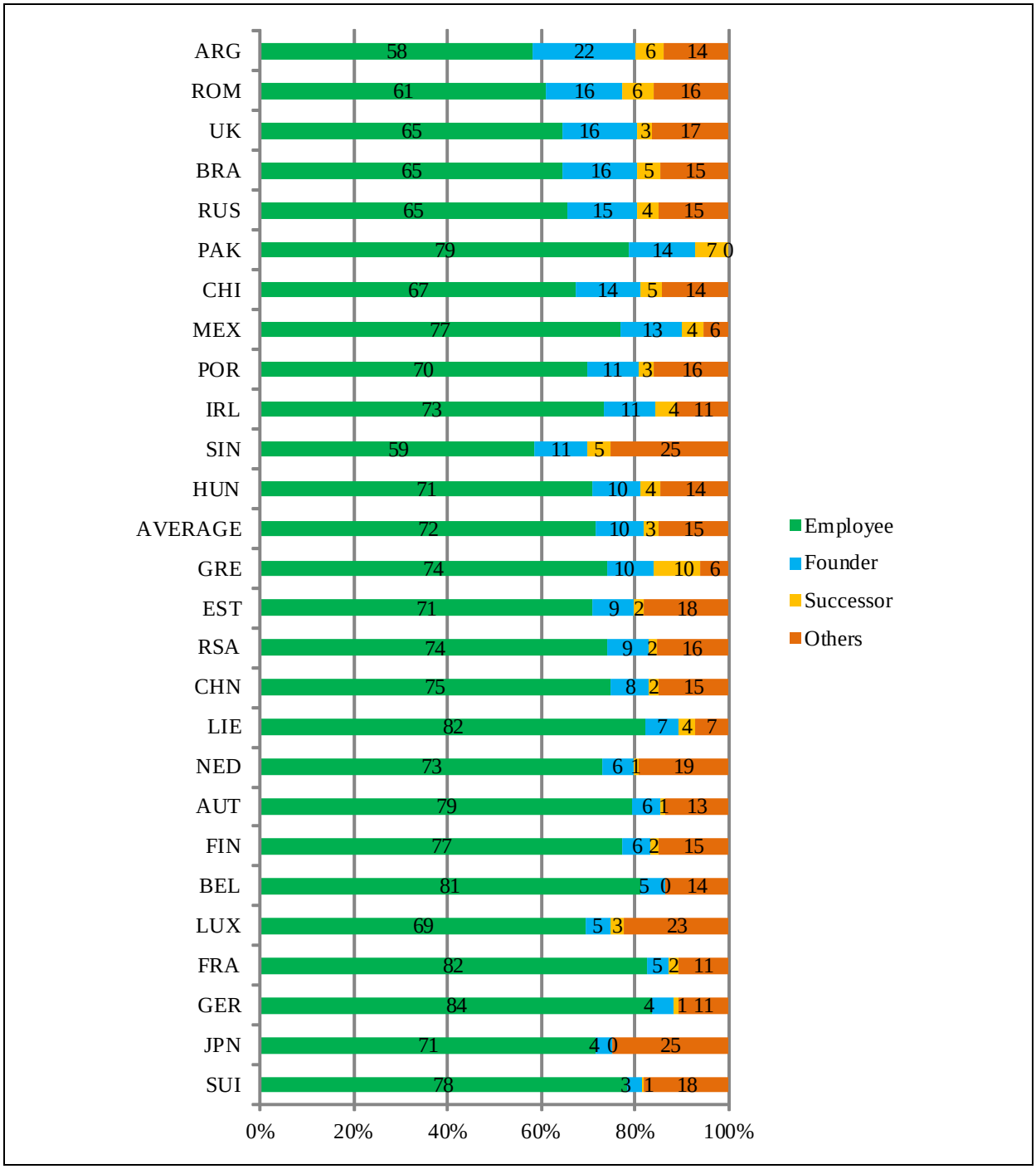

Figure 11: Natural science students directly after studies

With natural science students' career choice intentions directly after studies, we see a similar pattern on average as with business students. In Germany, France, Liechtenstein and Belgium, the share of intentional employees is higher than 80%. Highest rates for intentional founders can be identified in Argentina, Romania, UK, and Brazil.

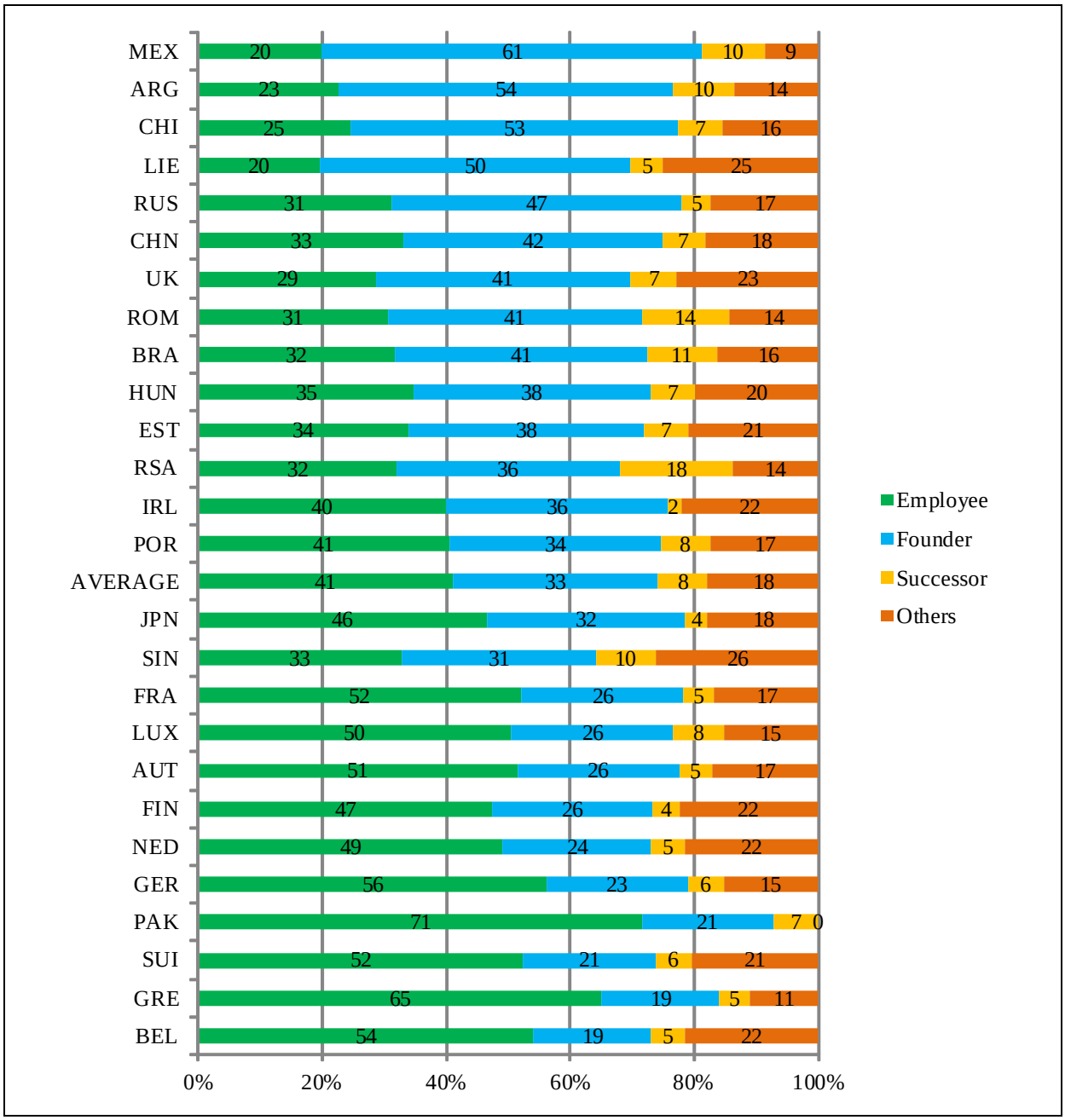

Figure 12: Natural science students 5 years after studies

5 years after studies, we report that while the share of intentional employees has decreased in general, highest shares (more than 50%) can be found in Pakistan, Greece, Belgium, Germany, France, Switzerland, and Austria. The highest shares of intentional founders exist in Mexico, Argentina, and Chile.

4.1.3 Social science students

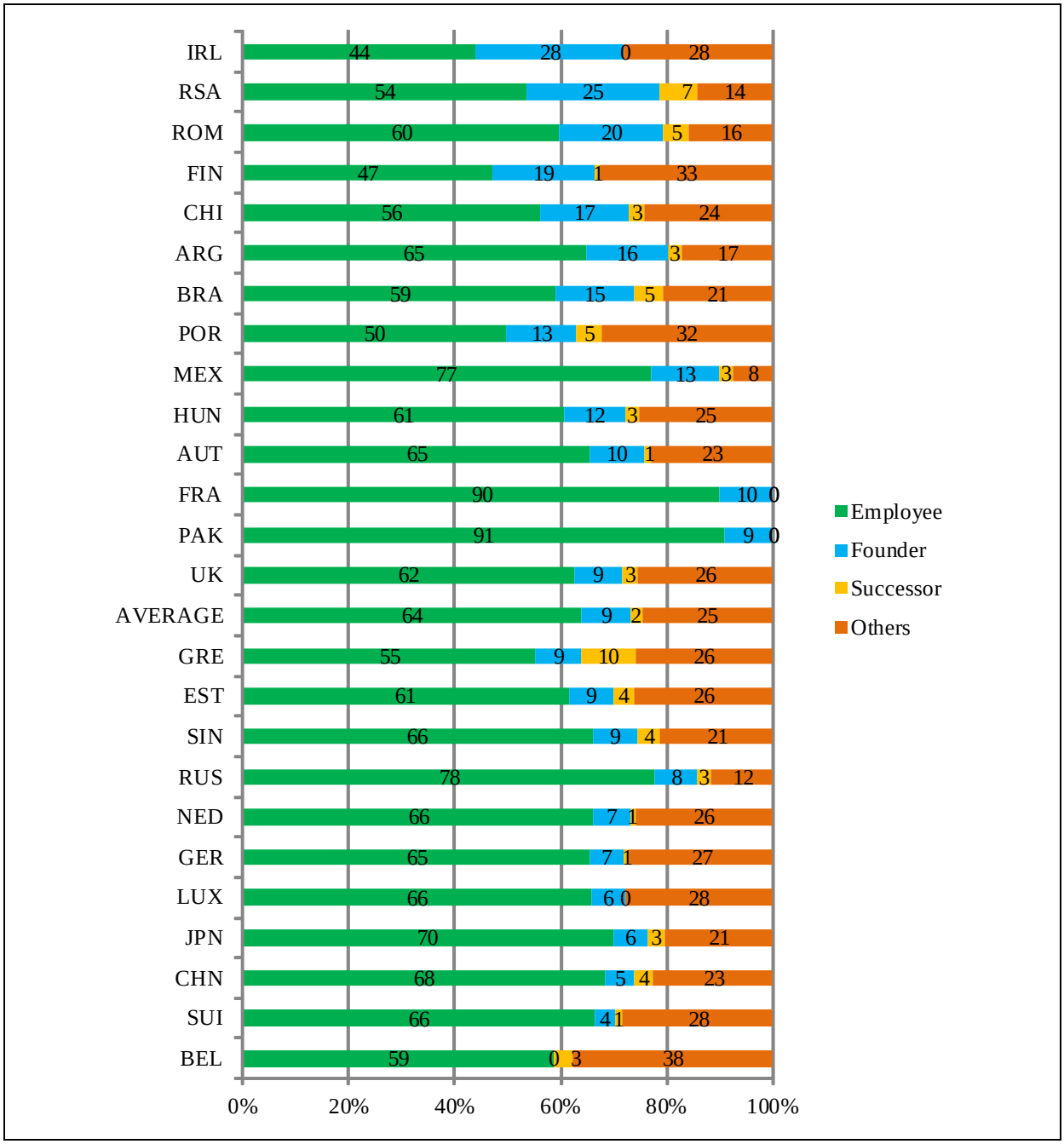

Figure 13: Social science students directly after studies

Among social scientists, the countries with the highest share of intentional employees are Pakistan, France, Russia, Mexico, and Japan. The share is exceptionally high in France and Pakistan, with 90% and 91%. The most intentional founders among social scientists can be found in Ireland, South Africa, Romania, and Finland. [8]

[8] Due to an insufficient number of social scientists, Liechtenstein was excluded from this and the next analysis.

Figure 14: Social science students 5 years after studies

5 years after studies, the most employee-focused social scientists can be found in Pakistan, France, Germany, and Russia, whereas the most entrepreneurial ones are studying in Argentina, South Africa, China, Romania, and Mexico.

4.2 Motives of students

To gain further insight into the reasons and motives that are relevant to students' career choice intentions across countries on a general level, we asked them how important different motives are for their future work and career path (1=very unimportant, 7=very important).

The following figure illustrates the findings on the global, aggregated level.

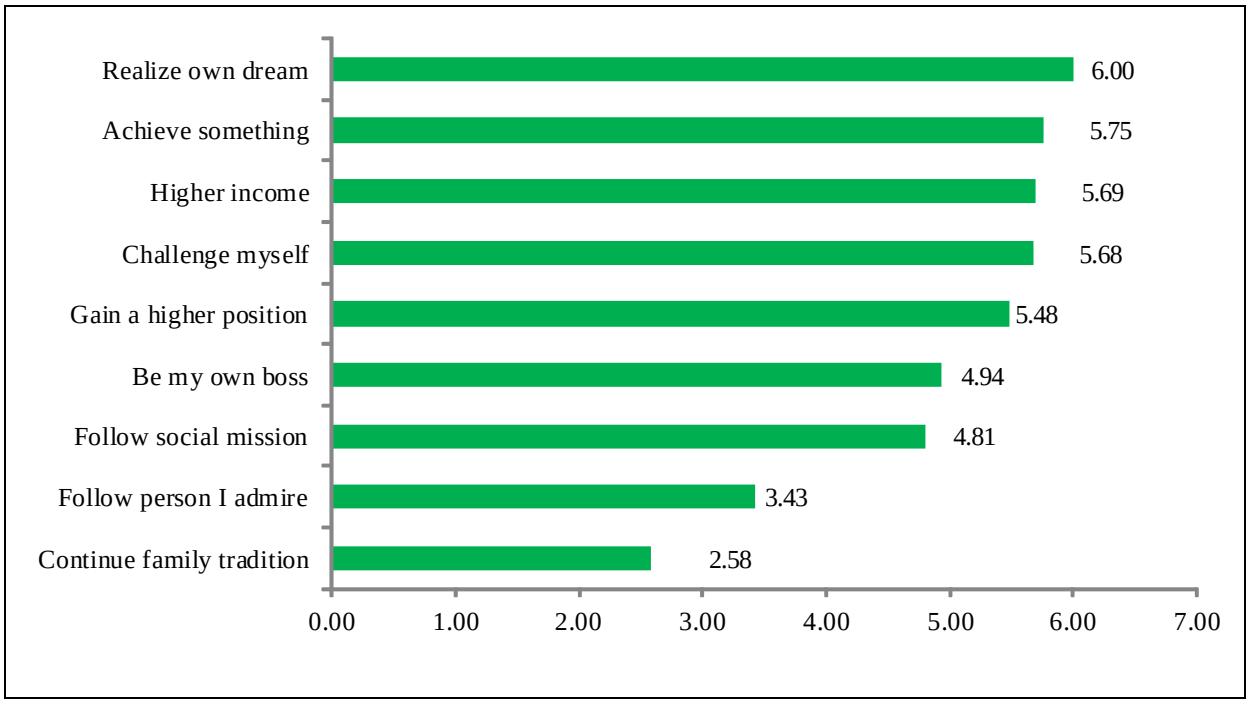

Figure 15: Importance of different general career choice motives on the global level

This figure shows that the motives that seem to be most important to students across the world are to realize their own dreams, to achieve something, to earn a higher income, and to challenge themselves. In general, a career as an entrepreneur seems to be appropriate to satisfy these motives.

Research has shown that different motives have a significant effect on students' intention to become employee, founder, or successor (e.g., see Zellweger, Sieger, & Halter, 2011). We intend to investigate this phenomenon also with the new GUESSS data by comparing the importance of motives between intentional employees, founders, and successors.

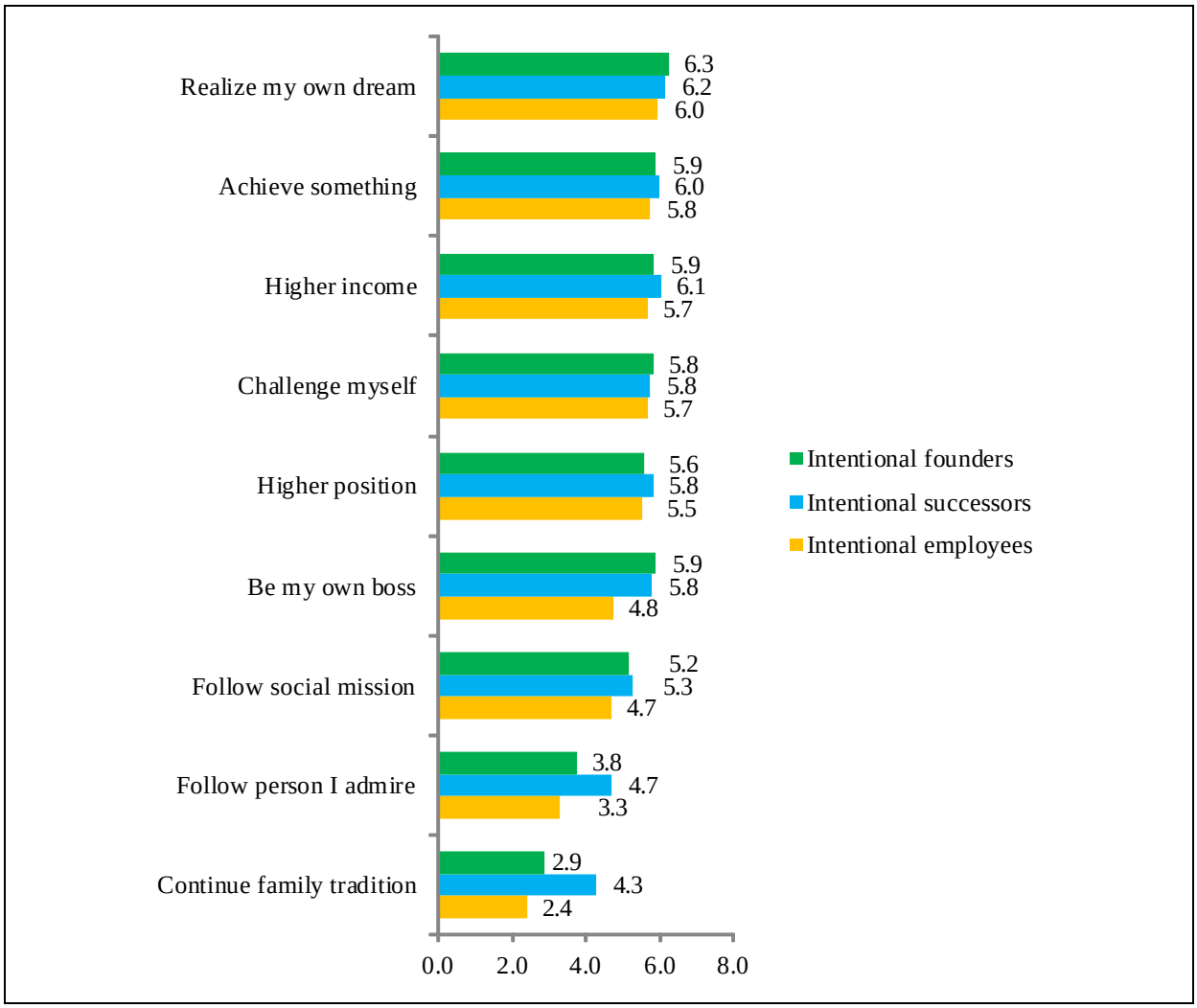

Figure 16: Different motives across career choice intentions

We see for instance, that the motive to follow a social mission is significantly less important among intentional employees. The highest importance of earning a higher income can be found among intentional successors, as well as the motives to follow an admired person and to continue a family tradition.

As culture is likely to have an important effect on the importance of different motives, we report the corresponding results on the country level in the following table.

	Challenge myself	Realize own dream	Achieve something	Gain a higher position	Be my own boss	Follow social mission	Higher income	Continue family tradition	Follow person I admire
ARG	6.31	6.42	5.78	4.94	5.85	5.44	6.07	2.63	3.48
AUT	5.67	5.84	5.40	5.06	4.59	4.41	5.29	1.89	2.41
BEL	5.49	5.85	5.41	5.18	4.40	3.98	5.31	2.30	3.12
BRA	5.86	6.33	6.18	6.16	5.45	5.56	6.31	2.97	4.20
CHI	6.23	6.50	5.74	4.68	5.82	5.50	6.01	3.05	3.96
CHN	5.47	5.84	5.62	5.07	5.05	5.06	5.33	3.26	4.22
EST	5.72	6.10	5.79	5.61	5.30	4.61	5.80	2.60	3.10
FIN	5.41	5.76	5.15	4.83	4.69	3.68	5.37	2.17	2.67
FRA	5.41	5.41	5.19	5.15	4.50	3.96	5.51	2.35	3.05
GER	5.49	5.68	5.38	5.01	4.37	4.20	5.27	1.94	2.44
GRE	5.28	5.64	5.35	5.45	5.34	4.95	5.81	3.07	3.90
HUN	5.29	6.05	6.09	5.66	5.35	4.42	6.08	2.98	3.39
IRL	5.95	6.21	5.65	5.63	5.35	4.26	5.51	2.55	3.55
JPN	5.52	5.61	5.41	4.61	4.28	4.90	5.37	3.24	4.11
LIE	5.81	5.76	5.44	5.11	5.15	4.05	5.20	2.59	2.86
LUX	5.30	5.73	5.26	5.32	4.91	4.50	5.59	2.53	3.14
MEX	6.24	6.47	5.85	5.14	5.92	5.51	6.26	3.51	4.57
NED	5.77	5.76	5.61	5.08	4.17	4.40	4.93	2.12	3.04
PAK	4.93	5.26	5.31	5.31	5.33	5.25	5.20	4.52	4.80
POR	5.81	5.93	5.47	5.28	4.58	4.70	5.39	2.51	3.53
ROM	5.76	6.18	6.23	5.92	5.71	5.15	6.24	3.53	4.38
RSA	6.15	6.49	6.07	6.17	5.90	5.03	5.97	3.79	4.75
RUS	5.01	6.09	5.94	5.72	5.77	4.69	6.15	3.35	3.88
SIN	5.58	5.97	5.64	5.65	5.08	4.91	5.80	3.99	4.56
SUI	5.63	5.68	5.22	4.87	4.37	4.39	5.10	1.93	2.66
UK	5.84	6.04	5.75	5.71	5.21	4.58	5.62	3.00	4.00
AVERAGE	*5.68*	*6.00*	*5.75*	*5.48*	*4.94*	*4.81*	*5.69*	*2.58*	*3.43*

Table 3: Motives of students across countries

Research has shown that the motive to be one's own boss is very relevant in the context of new venture creation (Carter et al. 2003, Zellweger et al. 2011). To illustrate the strength of this career choice motive across countries in more detail, we use the following figure. We see that this motive is especially strong in Mexico, South Africa, Argentina, and Chile, while it is less important in the Netherlands, Japan, and Germany.

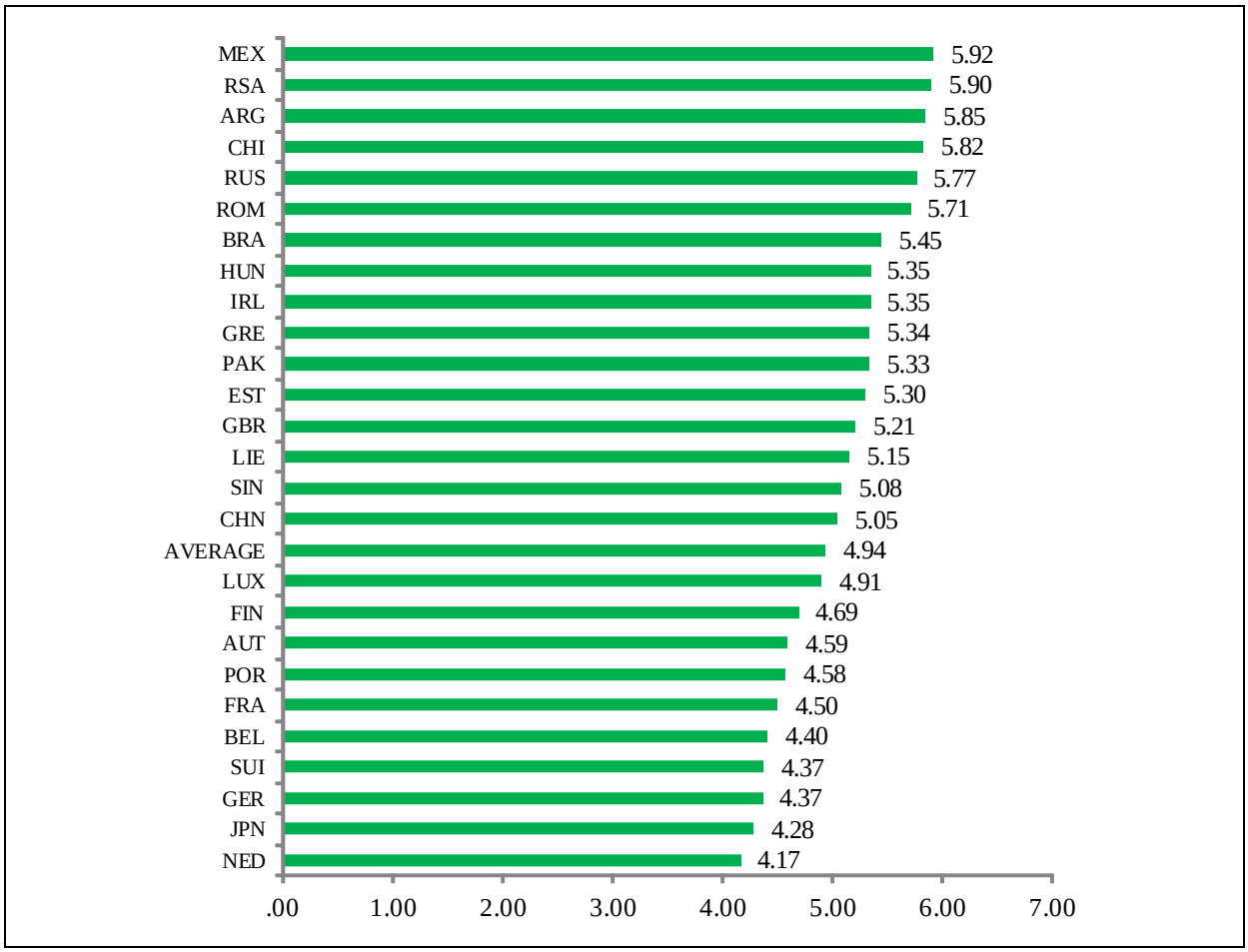

Figure 17: Strenght of being my own boss motive across countries

4.3 Strength of founding intentions

Gaining insights on which career paths students across the world intend to pursue is only the first step in our analysis. For a more in-depth analysis, we asked all students if and to what extent they have already been thinking about founding an own company.

In the following, we present the averages of all possible answer options, categorize the students in three groups, and present the results across nations. Then, we enter a more detailed level of analysis and group the students according to study fields.

4.3.1 General average

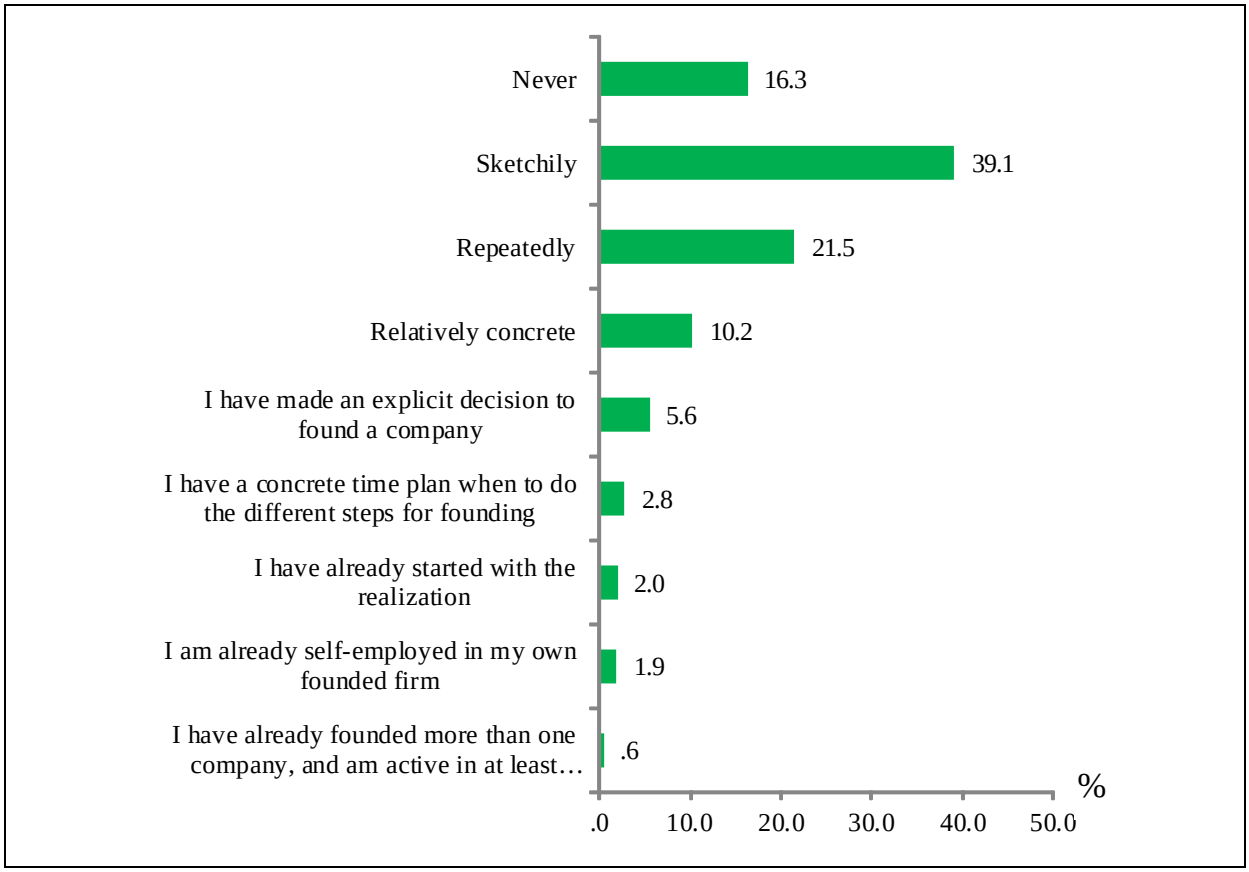

Figure 18: Strength of founding intention in general

This figure shows that more than half of all answering students did not or only sketchily think about founding an own company. More than 40% have quite intensively thought about it, whereas 2.5% are already self-employed. The following figure illustrates the share of non-founders[9], intentional founders[10], and existing founders[11] across nations.

[9] Includes answer options "never" and "sketchily"
[10] Includes answer options "repeatedly", "relatively concrete", "I have made an explicit decision…", "I have a concrete time plan…", and "I have already started with the realization".
[11] Includes answer options "I am already self-employed…" and "I have already founded…"

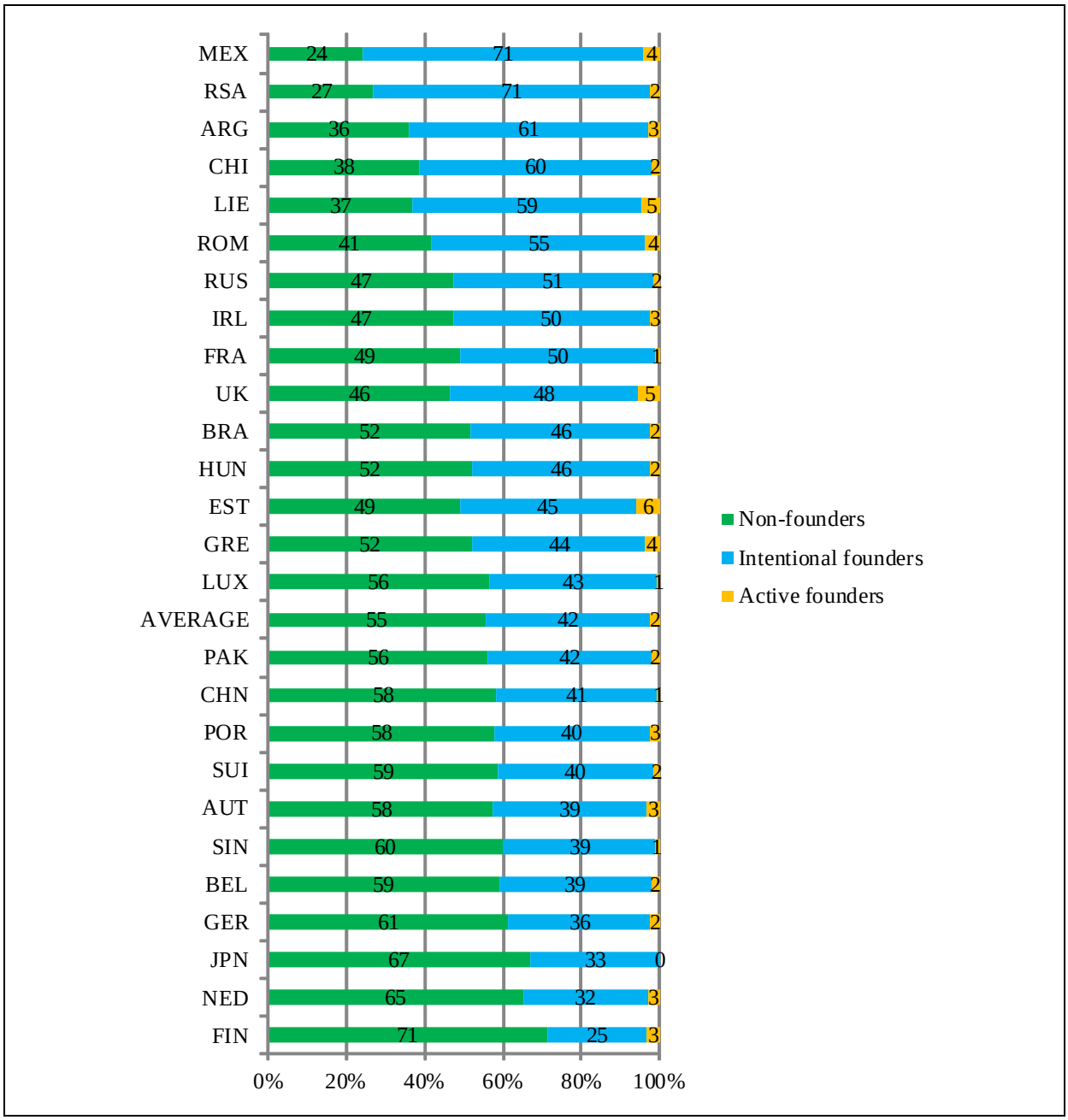

Figure 19: Founding intention across nations

In total average, we note that more than half of the students can be classified as non-founders, and 42% as intentional founders. The share of non-founders is highest in Finland, Japan, the Netherlands, and Germany. Intentional founders are especially numerous in Mexico, South Africa, Argentina, and Chile. These differences can partly be explained by the differing intentions across study fields, where the following figures shed a more nuanced light on.

4.3.2 Grouped by study field and nation

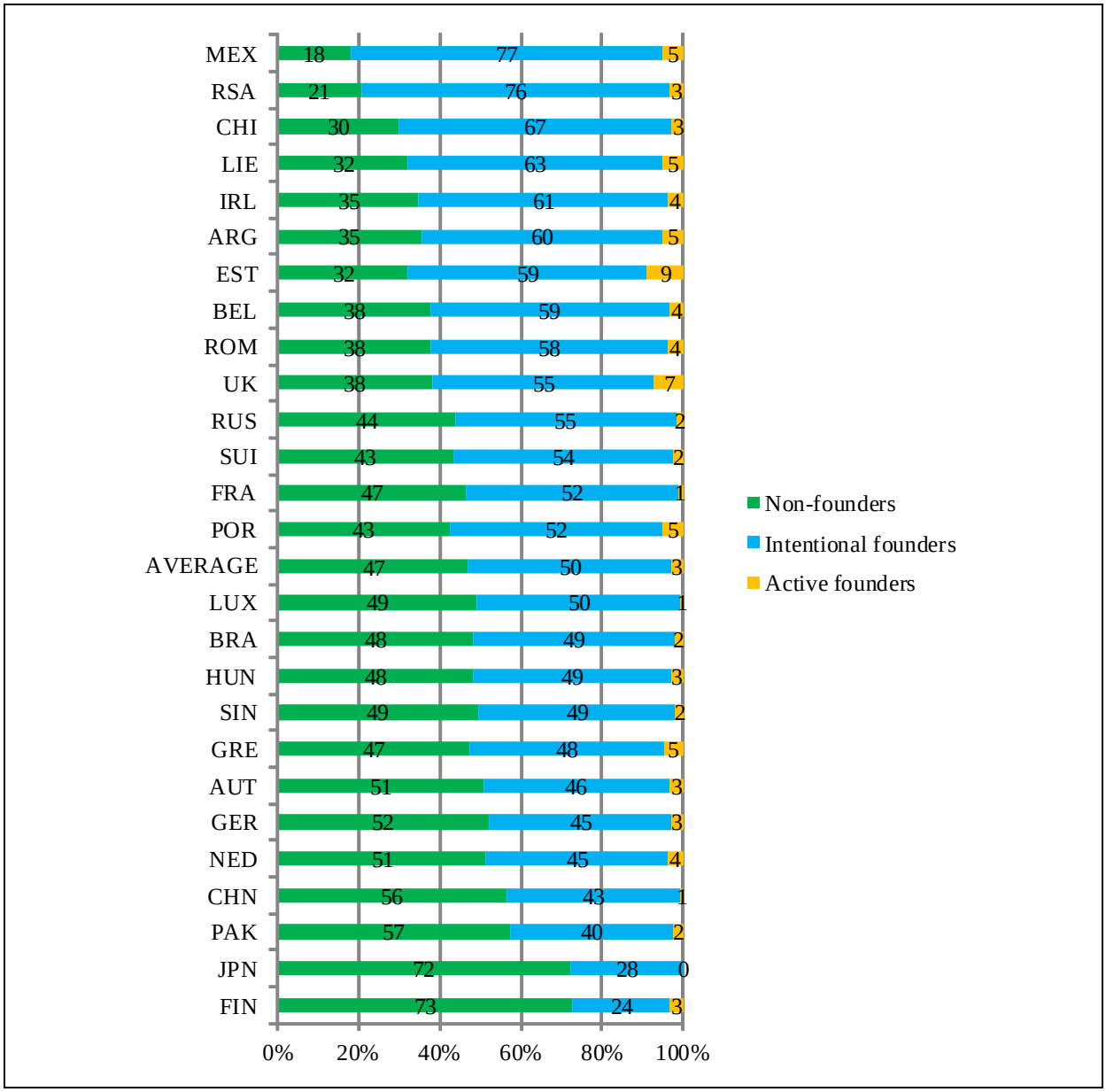

Figure 20: Founding proclivity of business and economics students

This figure offers a more fine-grained insight into students' founding proclivity. We see that the share of non-founders among business students is highest in Finland and Japan, whereas the share of intentional founders is highest in Mexico, South Africa, Chile, and Liechtenstein. Overall, we find a lower share of non-founders and a higher share of intentional founders in the business students sample compared to total average. The highest rates of already self-employed students occur in Estonia and in the UK.

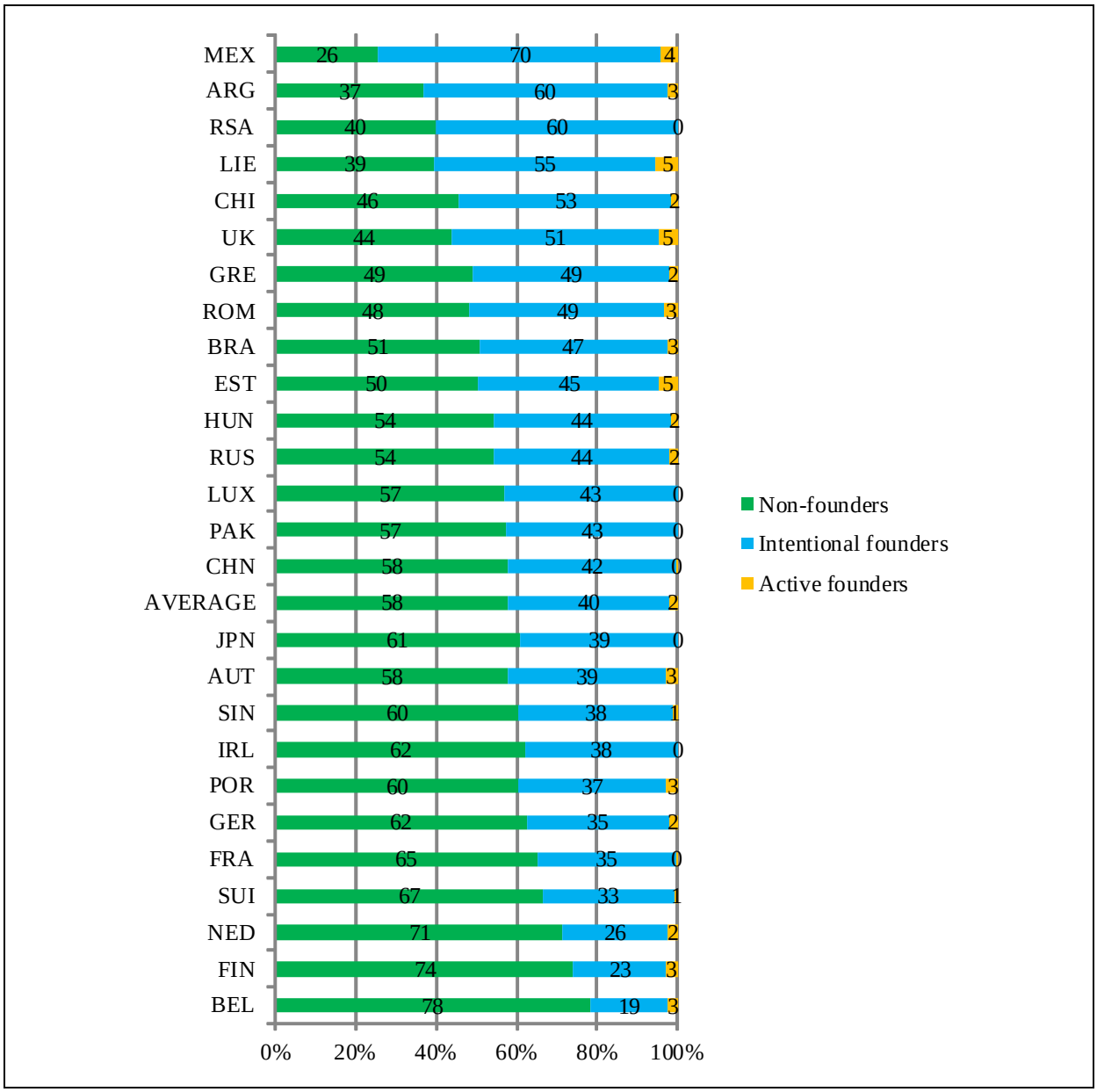

Figure 21: Founding proclivity of natural science students

Most obviously, the share of non-founders among natural science students is significantly higher than among business students; and the share of intentional founders is significantly lower. The most entrepreneurial countries in that regard are Mexico, Argentina, and South Africa, whereas the least entrepreneurial ones are Belgium, Finland, and the Netherlands.

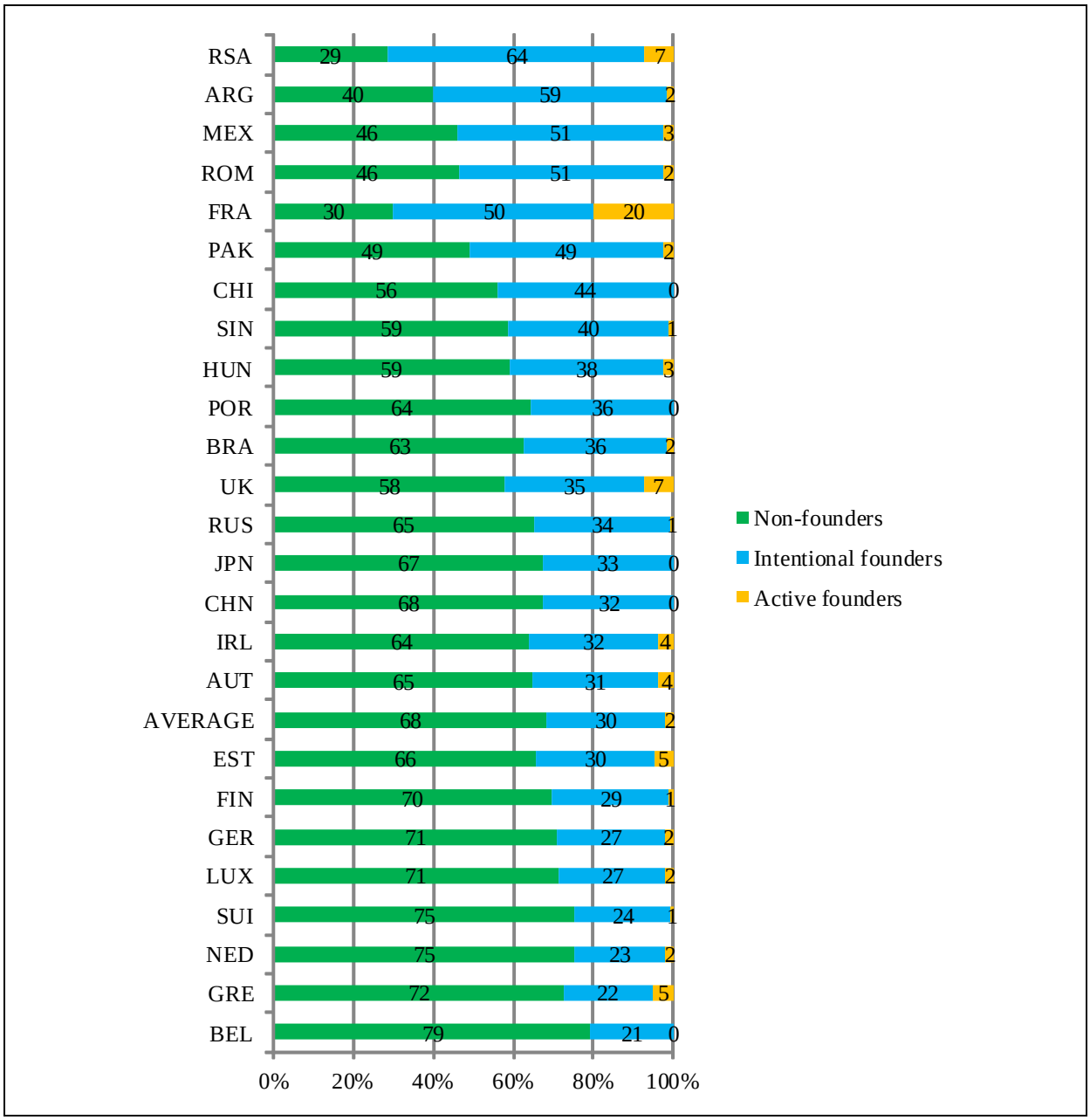

Figure 22: Founding proclivity of social science students

As expected, the share of non-founders among social science students is significantly higher, and the share of intentional founders significantly lower than in the other two study fields. The highest shares of non-founders can be observed in Belgium, the Netherlands, Switzerland, and Greece. Intentional founders are very prominent in South Africa, Argentina, Mexico, and Romania. Interestingly, a surprisingly high rate of social science students is already self-employed in France. [12]

[12] Also here Liechtenstein was excluded due to a too low number of social science respondents.

4.4 Intentional founders

4.4.1 Founding steps

To investigate the intentional founders in more detail, we asked this group of students which steps they had already undertaken in the process of founding their own firm. The following figure depicts the frequencies of the different answer options (multiple answers possible).

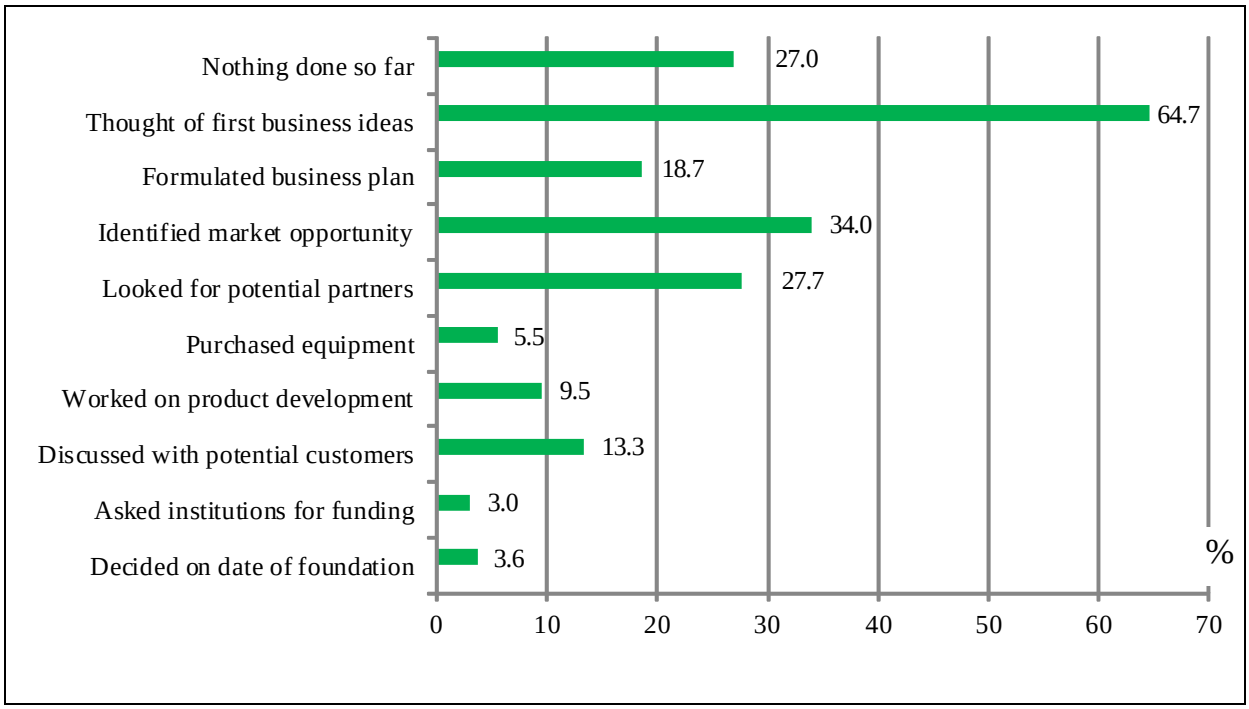

Figure 23: Founding steps already undertaken

The data shows that almost two third of the intentional founders have already thought of first business ideas. On the other side, 27% indicated that they had done nothing so far. Activities in the later stage of the founding process, such as purchasing equipment, deciding on a fix date of founding, or negotiations with potential investors, have only been done by less than 6% of the intentional founders.

4.4.2 Barriers to founding

It is also of high interest which factors inhibit students' intention to start an own venture. Thus, we asked students to what extent several different issues represent a barrier to founding a company (1=not at all, 7=very much). The following figure illustrates the average relevance of these barriers across all nations. Data shows that access to financial capital is the most relevant aspect that prevents students from founding an own company. The second most important reason is bearing financial risk, and the third one is the economic environment in general.

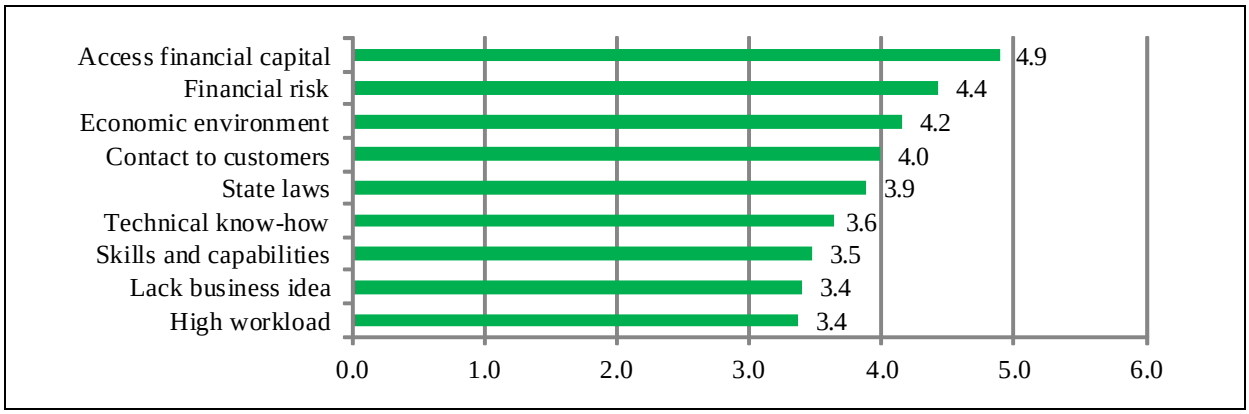

Figure 24: Founding barriers on global average

The following table lists the values for all barriers in all countries. In addition, we sorted the countries by the total average of the relevance of the different barriers (last column). This indicates how conducive the general context with regard to founding a company is perceived. We see that Liechtenstein, the Netherlands, and Ireland seem to offer to most founding-friendly environment. On the other side, the highest values for the founding barriers can be found in Singapore, China, Japan, and Greece.

	Access fin. capital	State laws	Lack business idea	Skills	Techn. know-how	High work load	Fin. risk	Contact to custom.	Econ. environ-ment	*Country average*
LIE	4.43	3.55	3.50	3.08	3.55	2.99	4.09	3.69	3.16	*3.56*
NED	4.56	3.37	3.54	3.45	3.71	3.25	4.05	3.82	3.79	*3.73*
IRL	5.31	3.32	2.98	3.14	3.57	3.03	4.04	3.84	4.48	*3.74*
HUN	5.24	3.64	2.95	3.08	3.22	2.41	4.45	4.10	4.71	*3.76*
FIN	4.56	3.34	3.46	3.45	3.29	3.41	4.14	4.08	4.09	*3.76*
AUT	4.66	3.94	3.30	3.06	3.18	3.48	4.65	4.00	3.88	*3.80*
SUI	4.81	3.63	3.55	3.34	3.59	3.45	4.49	3.85	3.83	*3.84*
BRA	4.88	4.13	3.07	3.40	3.59	3.25	4.31	3.82	4.11	*3.84*
ARG	5.04	3.32	3.37	3.28	3.49	3.53	4.17	3.94	4.61	*3.86*
GER	4.88	4.00	3.47	3.26	3.37	3.45	4.69	4.04	3.85	*3.89*
AVERAGE	*4.89*	*3.89*	*3.40*	*3.47*	*3.64*	*3.37*	*4.42*	*3.99*	*4.15*	*3.91*
RSA	5.10	3.50	3.41	3.49	3.68	3.65	4.45	3.98	4.21	*3.94*
BEL	4.81	3.79	3.89	3.69	4.00	3.54	4.18	3.72	3.91	*3.95*
CHI	5.02	3.73	3.89	3.45	3.73	3.92	4.52	4.16	4.05	*4.05*
UK	5.03	3.80	3.52	3.74	3.97	3.72	4.31	4.18	4.22	*4.05*
MEX	4.99	3.91	3.85	3.33	3.60	3.78	4.40	4.08	4.56	*4.06*
ROM	5.07	4.62	3.32	3.33	3.61	3.40	4.34	4.02	4.81	*4.06*
FRA	4.97	3.78	4.05	3.75	3.97	3.29	4.68	3.94	4.18	*4.07*
LUX	5.05	3.89	3.65	3.62	4.00	3.66	4.64	4.17	4.35	*4.11*
POR	5.27	4.24	3.69	3.60	3.85	3.58	4.59	4.20	5.05	*4.23*
PAK	4.23	4.06	4.08	4.34	4.18	4.17	4.35	4.40	4.55	*4.26*
RUS	5.10	3.94	3.70	4.28	4.22	3.71	4.73	4.60	4.55	*4.31*
EST	4.96	3.61	4.49	4.46	4.31	3.85	4.63	4.37	4.62	*4.37*
GRE	4.62	4.42	3.93	4.19	4.28	4.16	4.68	4.43	5.34	*4.45*
JPN	5.09	4.41	4.17	4.72	4.86	4.08	4.87	4.30	4.46	*4.55*
CHN	4.95	3.94	4.84	4.84	4.63	4.33	4.88	4.82	4.82	*4.67*
SIN	5.24	4.49	4.61	4.78	4.83	4.45	5.08	5.10	4.81	*4.82*

Table 4: Barriers to founding

4.4.3 Effort, partners, and cultural background

To gain further insights into the characteristics of intentional founders, we investigate their effort that they wish to invest in their planned venture and the number of partners that they intend to found the company with. Regarding work effort, the international data show a quite coherent picture. On average, students plan to invest slightly more than half of their average working time in their planned venture. The lowest average value can be observed in the Netherlands, where founding an own company mostly seems to be a part-time activity. On the other side, students in Romania plan to invest almost two thirds of their time in their company to be founded (average).

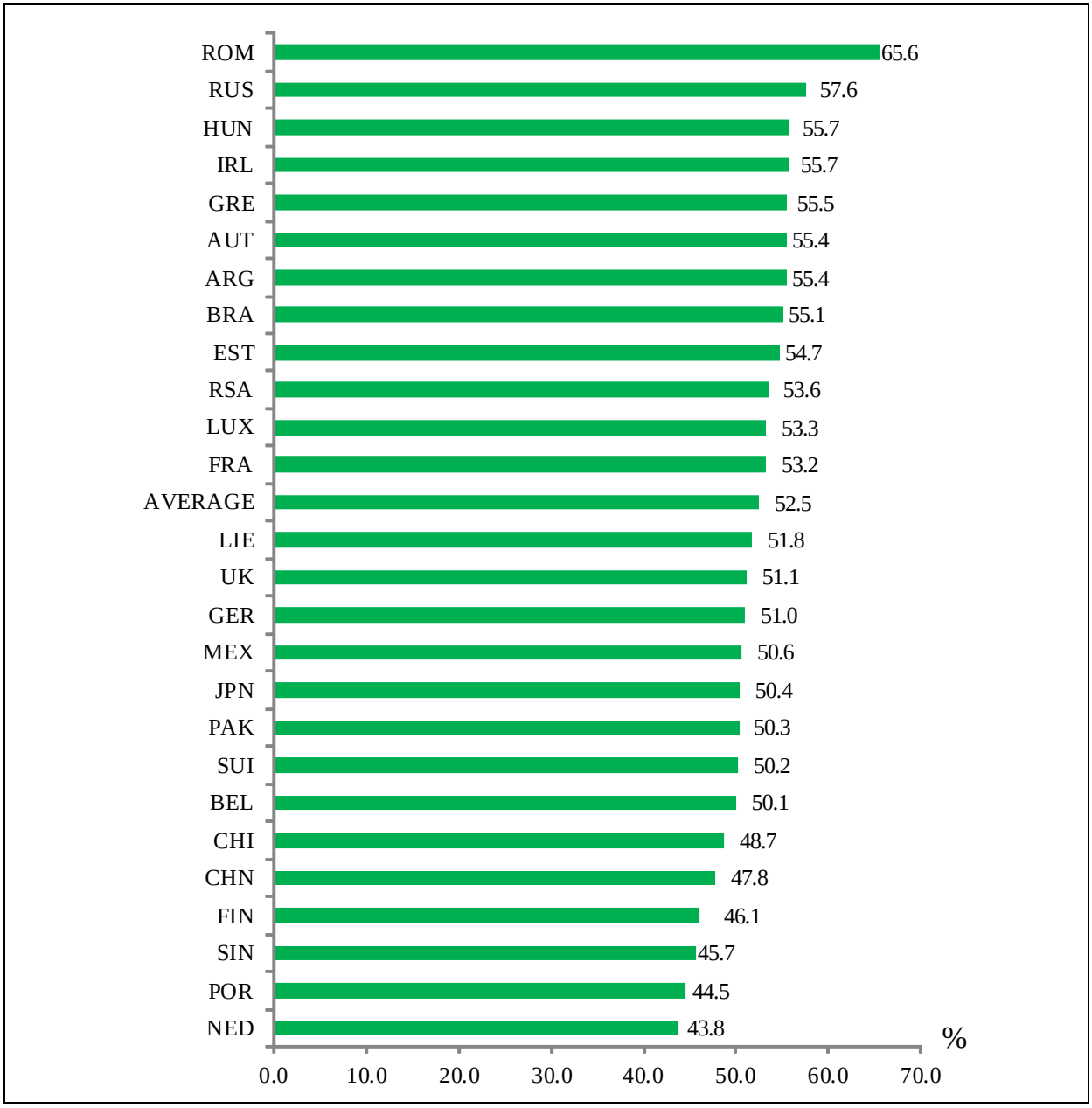

Figure 25: Average weekly percentage of working time to be invested in the new venture

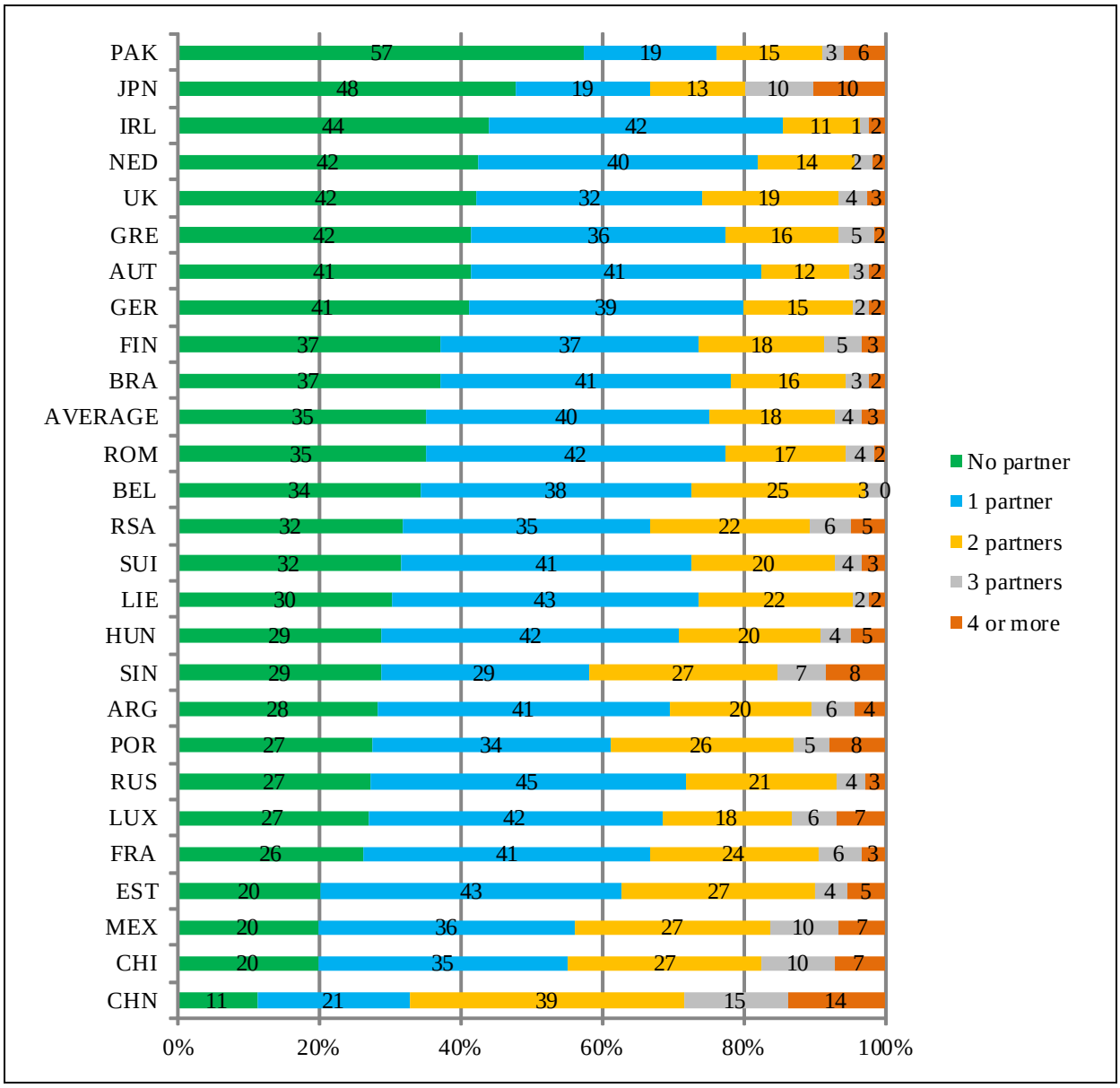

Figure 26: Number of founding partners across nations

The preceding figure shows that the number of founding partners differs considerably across countries. In Pakistan for instance, more than half all intentional founders intend to start their venture without partner. Other high values can be found in Japan, Ireland, and Greece. In China, on the opposite, only 11 percent want to start alone. The share of single intentional founders is also particularly low in Chile, Estonia, and Mexico. In China, almost 30 percent of all intentional founders want to work with at least three partners.

To investigate this interesting phenomenon in more depth, we calculated the average number of partners for the intended ventures per country, as depicted in the following figure.

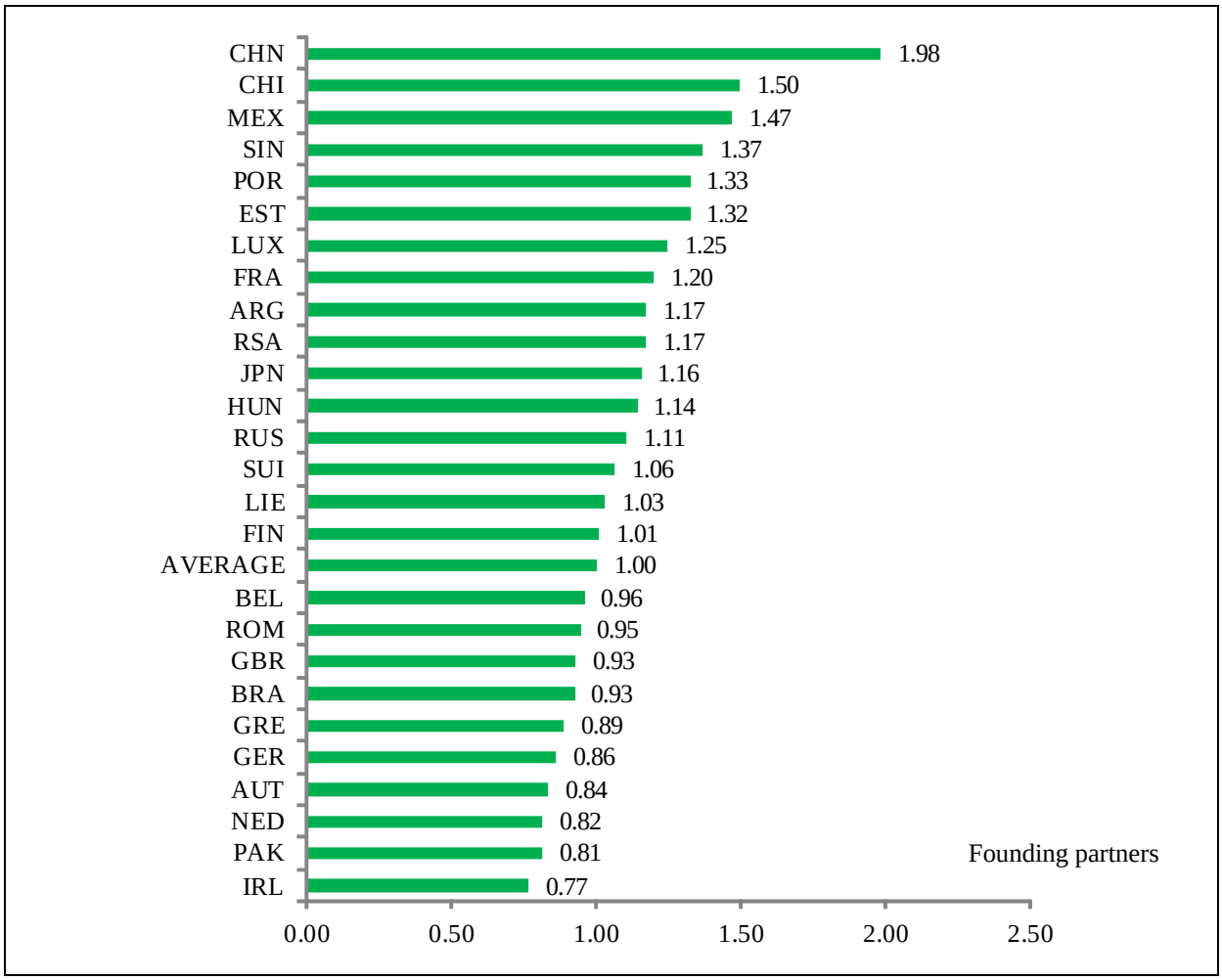

Figure 27: Average number of intended founding partners across countries.

We expect that this phenomenon can partly be explained by the cultural differences across countries. Consequently, we add Hofstede's "Individualism" cultural dimension values[13] for each country and calculate a corresponding matrix, as the following figure illustrates. Despite a few of outliers, the trend line indeed suggests that the higher the individualism value of a country according to Hofstede, the lower the number of partners that students from the respective countries intend to found their company with.[14]

[13] See http://www.geert-hofstede.com/hofstede_dimensions.php
[14] Hofstede's individualism value for Liechtenstein could not be retrieved and is thus not included in the figure.

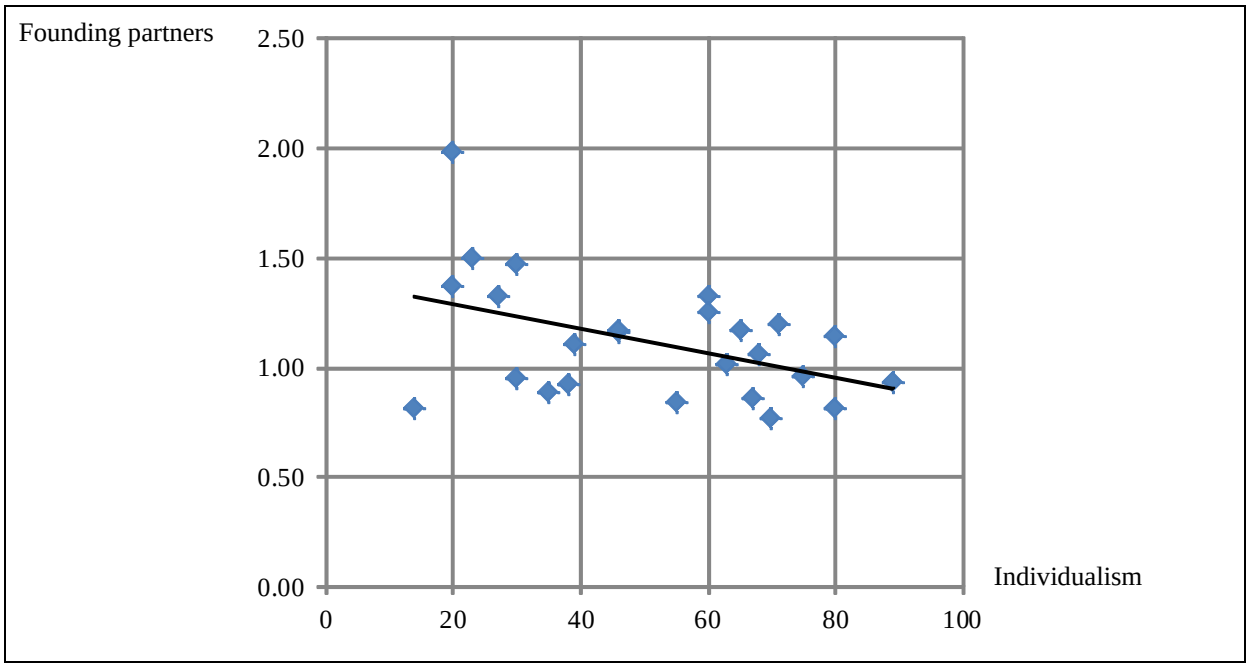

Figure 28: Number of intended founding partners vs. individualism across nations

5 Entrepreneurship Index

As in 2008, we also calculate an entrepreneurship index with the 2011 data. This index quantifies the entrepreneurial power of students across countries. Its calculation is based on two central questions. The first one is if and how seriously students have been thinking about founding a company. The possible answers were weighted as follows (single answer):

	Option	Weight	Type of founder
1	Never	1	Non-founder
2	Sketchily	1	Non-founder
3	Repeatedly	3	Intentional founder
4	Relatively concrete	3	Intentional founder
5	I have made an explicit decision to found a company	5	Intentional founder
6	I have a concrete time plan when to do the different steps for founding	7	Intentional founder
7	I have already started with the realization	7	Intentional founder
8	I am already self-employed in my own founded firm	8	Existing founder
9	I have already founded more than one company, and am active in at least one of them	10	Existing founder

Table 5: Index weights for question 1

As mentioned above, intentional founders received an additional set of questions pertaining to the steps that they had already undertaken.[15] We assigned a score to each option, as shown in the following table (multiple answers possible).[16]

	Option	Score
1	Nothing done so far	1
2	Thought of first business ideas	3
3	Formulated business plan	5
4	Identified market opportunity	5
5	Looked for potential partners	5
6	Purchased equipment	7
7	Worked on product development	7
8	Discussed with potential customers	7
9	Asked institutions for funding	8
10	Decided on date of foundation	10

Table 6: Index weights for question 2

As the different study fields are not equally represented across countries, and as we have found that their entrepreneurial attitudes and activities differ, we split the analysis according to study fields in the following. Presenting and discussing the total average of the Entrepreneurship Index would not be meaningful.[17]

[15] For existing founders, it is assumed that they have undertaken all possible steps. Their score has been adapted accordingly.

[16] Compared to GUESSS 2008, answer categories, options, and weights of both questions used for the index were slightly adapted based on other large-scale research projects (Panel Study of Entrepreneurial Dynamics, PSED, and Global Entrepreneurship Monitor, GEM). Thus, absolute index values of 2011 and 2008 cannot be compared one to one.

[17] In this study, an index was calculated for every student. Country indices are the averages of all students in that country. Reading example: a student who has indicated “relatively concrete” in the first question and options 3 and 5 in the second question, has a personal index of 13 (3+5+5).

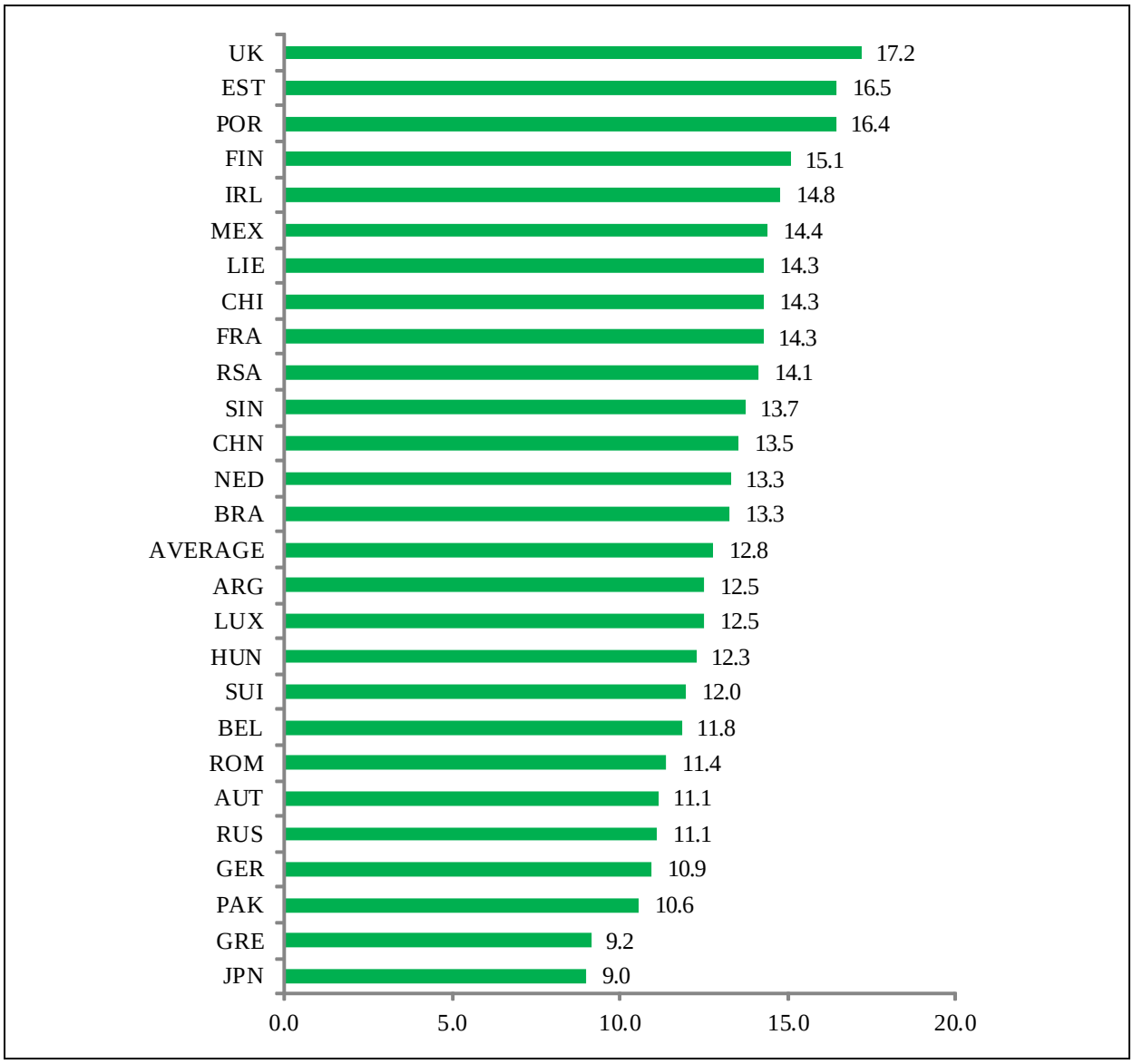

Figure 29: Entrepreneurship Index for business students across countries

The analysis shows that the highest entrepreneurial power among business students can be found in the UK, Estonia, and Portugal. The least entrepreneurial power is observed in Japan, Greece, Pakistan, and Germany.

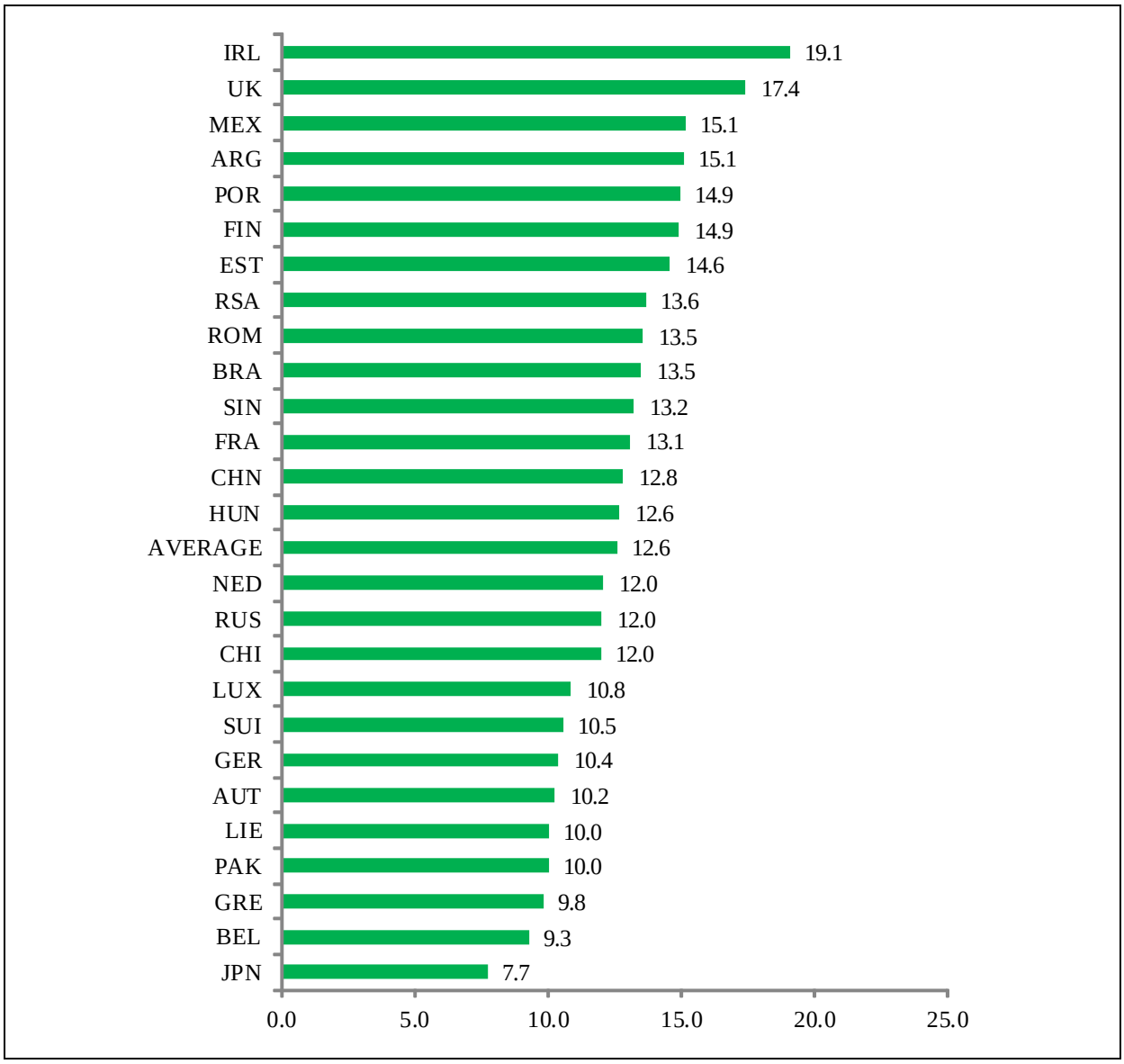

Figure 30: Entrepreneurship Index for natural science students across countries

We find that the entrepreneurship index for natural science students is a bit lower as for business students (12.6 compared to 12.8). The strongest countries here are Ireland, UK, and Mexico, whereas the weakest ones are Japan, Belgium, and Greece.

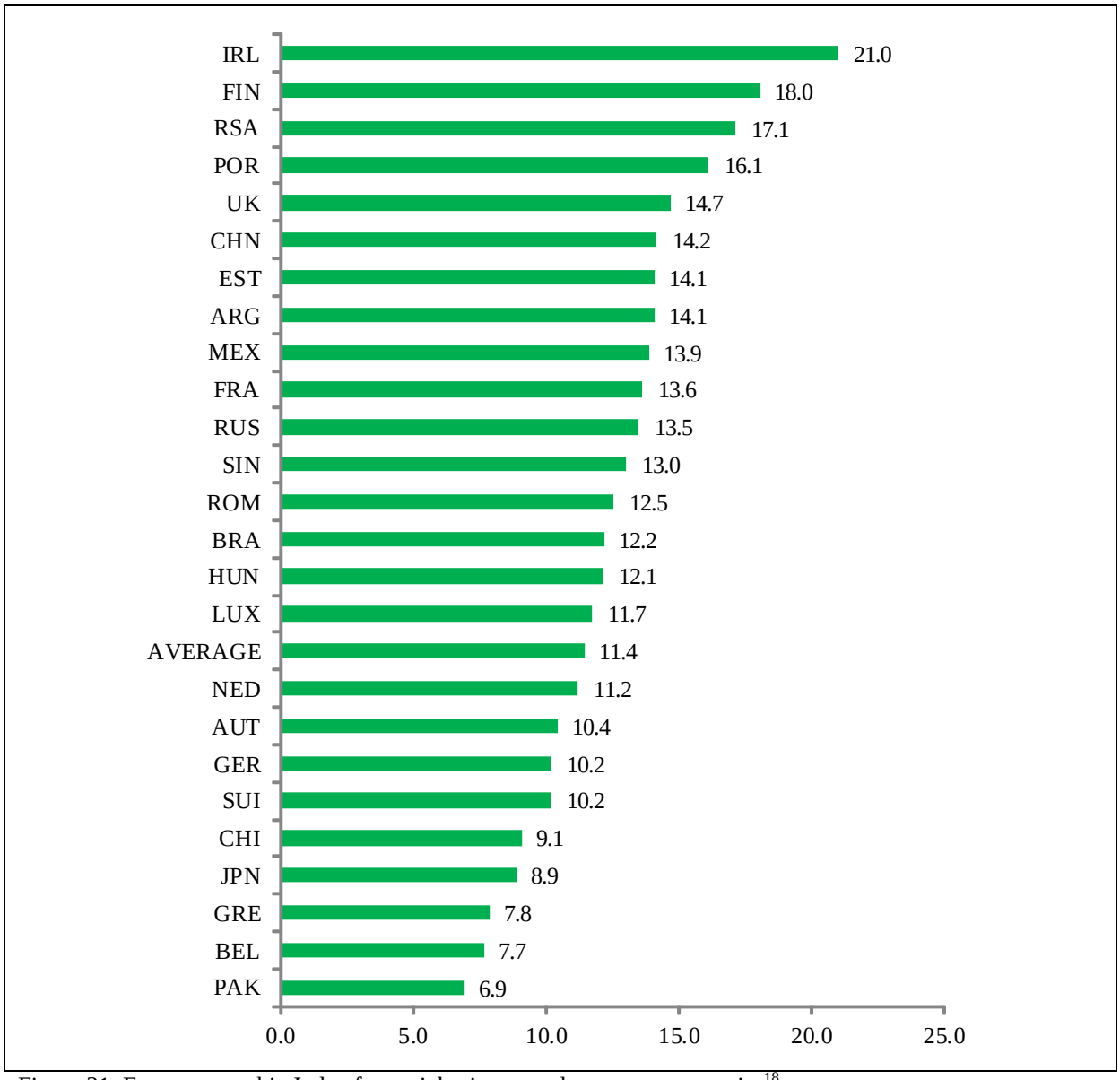

Figure 31: Entrepreneurship Index for social science students across countries[18]

What we see here is that the entrepreneurship index for social science students is approximately the same as for natural science students. Here, Ireland, Finland, and South Africa have the most entrepreneurial students; Pakistan, Belgium, Greece, and Japan have the least entrepreneurial ones.

[18] As with most other analyses for social science students, Liechtenstein was excluded due to a too low number of cases.

6 Existing founders

We have seen in chapter 4.2.1, that 2.5% of all students are already self-employed. Consequently, we are interested in their ventures. The following table gives an overview of main characteristics.

	No. of partners	Share of personal equity (in %)	No. of employees today	No. of employees planned in 5 years	Growth factor
ARG	2.10	68.58	3.15	10.83	3.44
AUT	1.57	80.23	1.99	4.77	2.40
AVERAGE	1.90	68.38	3.02	12.78	4.23
BEL	2.00	56.67	1.67	3.67	2.20
BRA	2.04	65.52	4.58	20.11	4.39
CHI	2.44	51.20	3.92	22.64	5.78
CHN	3.17	35.00	10.00	57.40	5.74
EST	2.13	66.50	1.95	7.12	3.65
FIN	2.16	63.23	1.41	7.96	5.65
FRA	2.05	68.85	4.35	11.10	2.55
GBR	1.49	82.55	5.28	13.04	2.47
GER	1.58	76.72	0.90	5.01	5.57
GRE	1.71	75.38	2.29	12.14	5.30
HUN	1.79	71.77	2.88	10.59	3.68
IRL	1.44	91.43	6.88	9.88	1.44
LIE	2.40	48.50	7.60	33.30	4.38
LUX	1.50	80.75	0.50	2.00	4.00
MEX	2.46	54.71	7.81	21.91	2.81
NED	1.72	68.26	1.81	7.63	4.22
PAK	1.57	100.00	9.00	32.50	3.61
POR	2.26	61.00	2.69	6.38	2.37
ROU	2.03	61.96	2.86	12.89	4.51
RSA	1.76	61.56	4.93	20.27	4.11
RUS	2.62	61.71	5.71	31.67	5.55
SIN	2.18	52.42	2.81	23.26	8.28
SUI	1.99	65.04	2.14	9.20	4.30

Table 7: Characteristics of students' new ventures

The analysis shows that students' new ventures have been founded with approximately two partners on average, whereas the responding student holds a majority ownership (more than two thirds of equity capital). Here, the highest values can be found in Ireland and Pakistan. While the ventures have around 3 employees on average today, their owners aim for almost 13 employees in 5 years from now. The growth factor varies considerably across countries. While active founders in Ireland intend to grow their venture by factor 1.44 in the next five years, Singaporean active founders aim to grow their business by more than factor 8. The following figure illustrates the growth factors across countries.

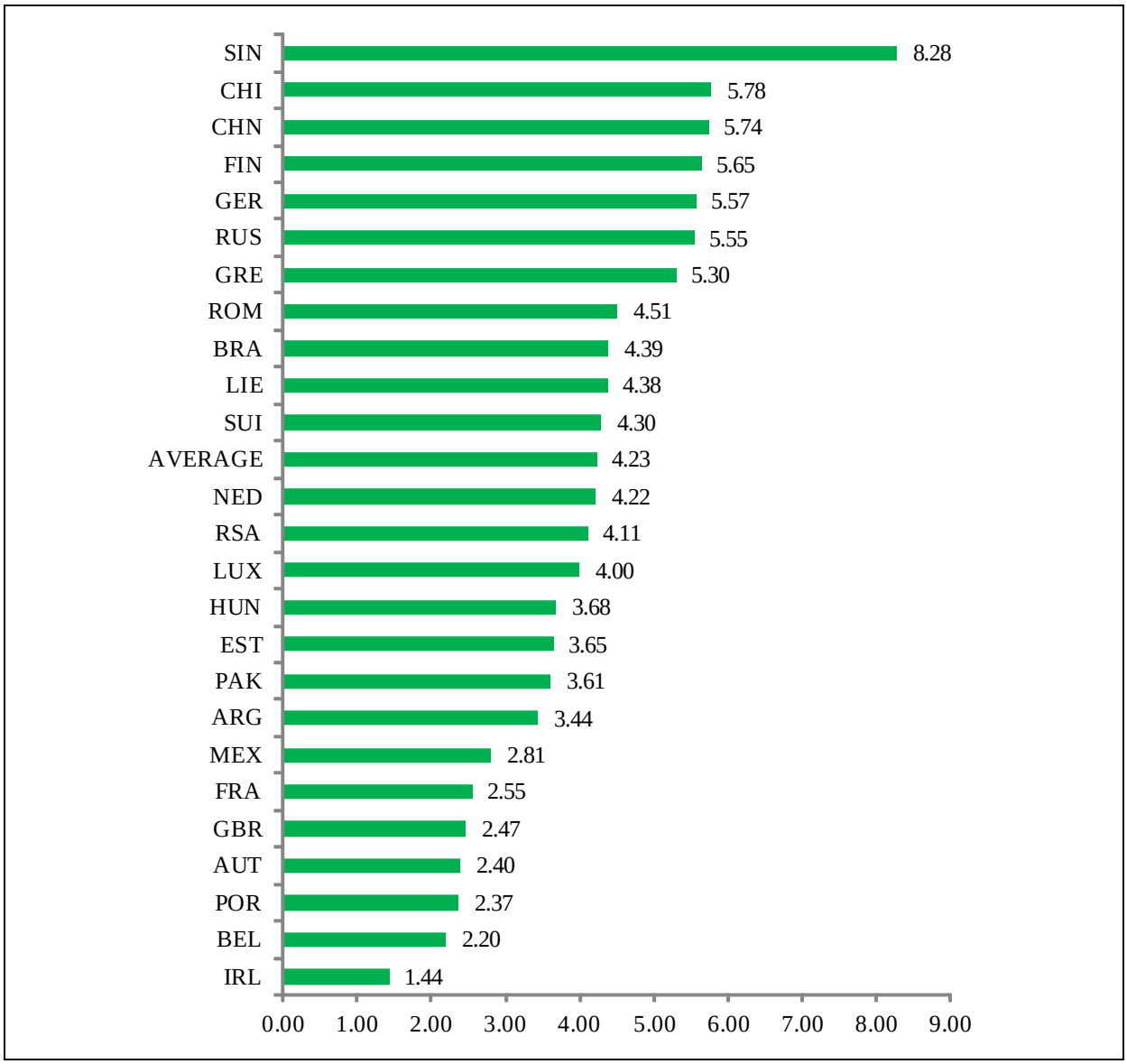

Figure 32: Intended growth factors of existing ventures across nations.

7 Family business background

Due to the social and economic importance of family firms across the world, we are also interested in students whose parents own a firm. The following table shows how many students with family business background exist across countries. We see that approximately 30% of all students have a family business background (N=28’105). The highest shares can be found in Mexico, Chile, and South Africa, whereas the share of students with family business background is lowest in China, Russia, and Luxembourg.

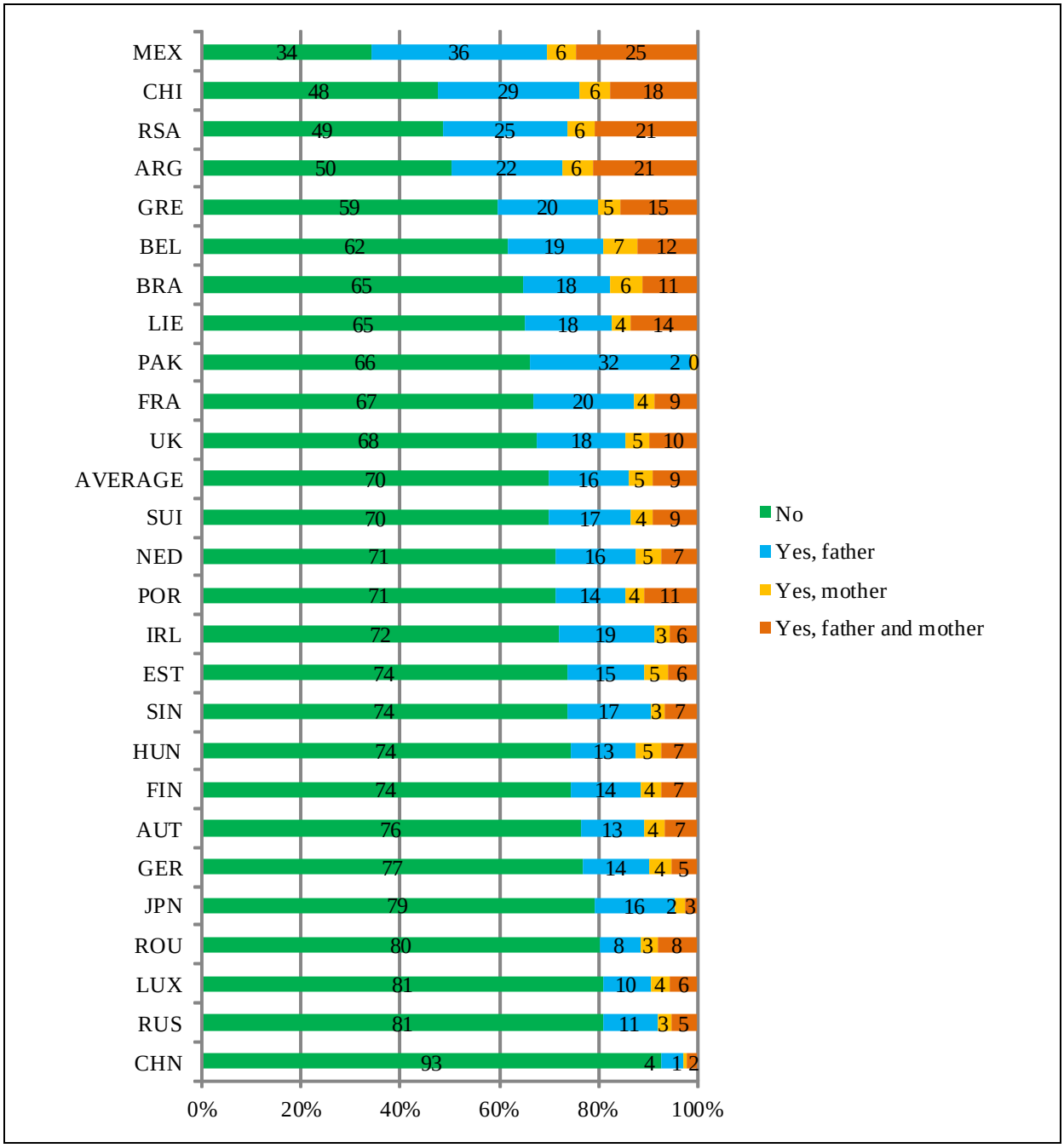

Figure 33: Students with family business background

As family-internal succession is of utmost importance for long-term family control and firm success, we are particularly interested in the career choice intentions of students with family business background. The following figure illustrates their intentions right after studies.

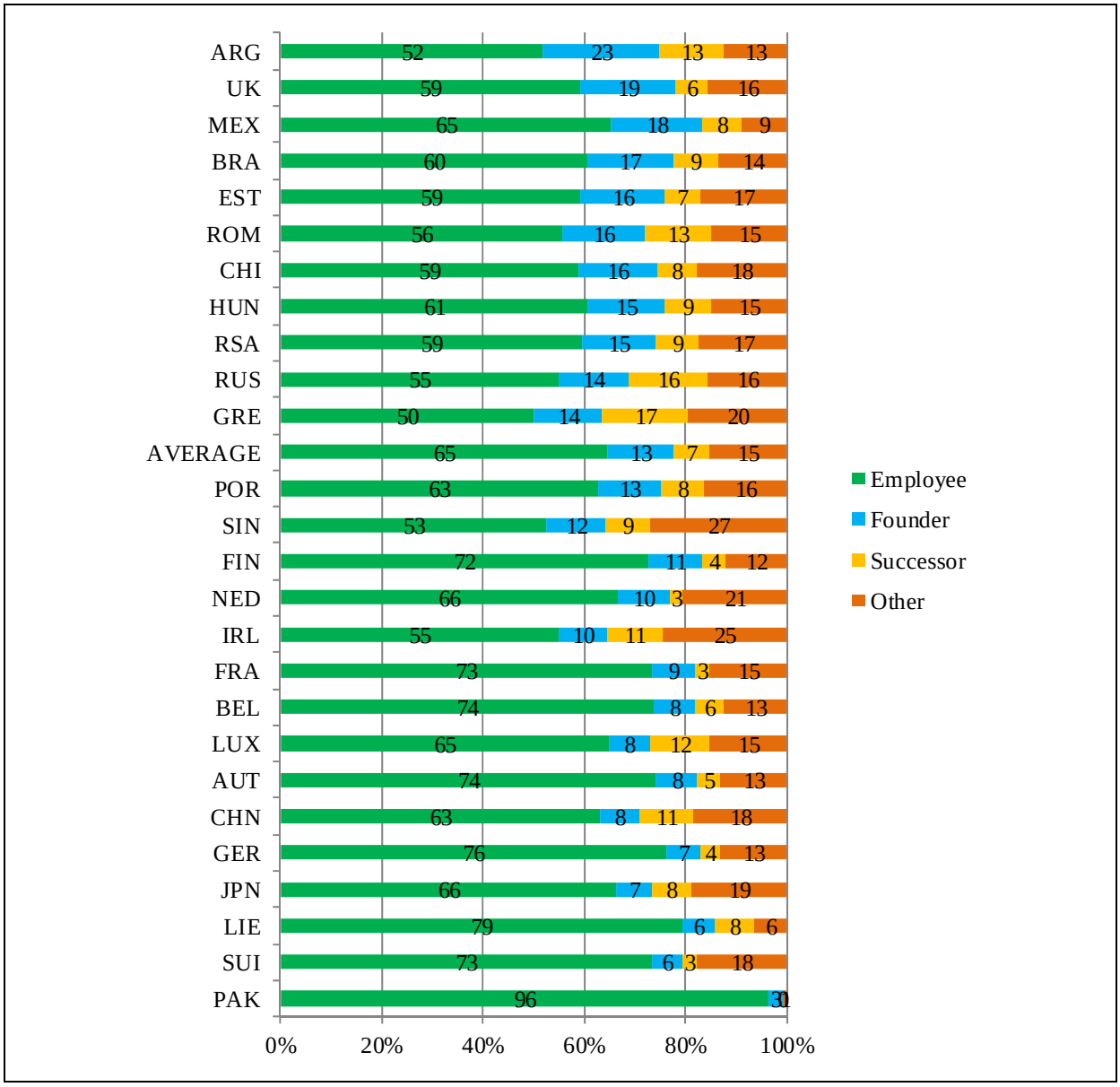

Figure 34: Career choice intentions directly after studies of students with family business background

We find that only 7% of all students with family business background intend to take over their parents' family firm directly after studies. The share of "immediate successors" is highest in Argentina, the UK, Mexico, and Brazil, and lowest in Pakistan, Switzerland, and Liechtenstein. Becoming an employee right after studies is clearly the most preferred option. Interestingly, the share of students with family business background that intend to found an own firm right after completion of studies is almost twice as high as the share of immediate successors. Put differently, succession might be an option for potential successors, but only to a little extent directly after studies. Regarding career choice intentions five years after studies, the situation looks as follows:

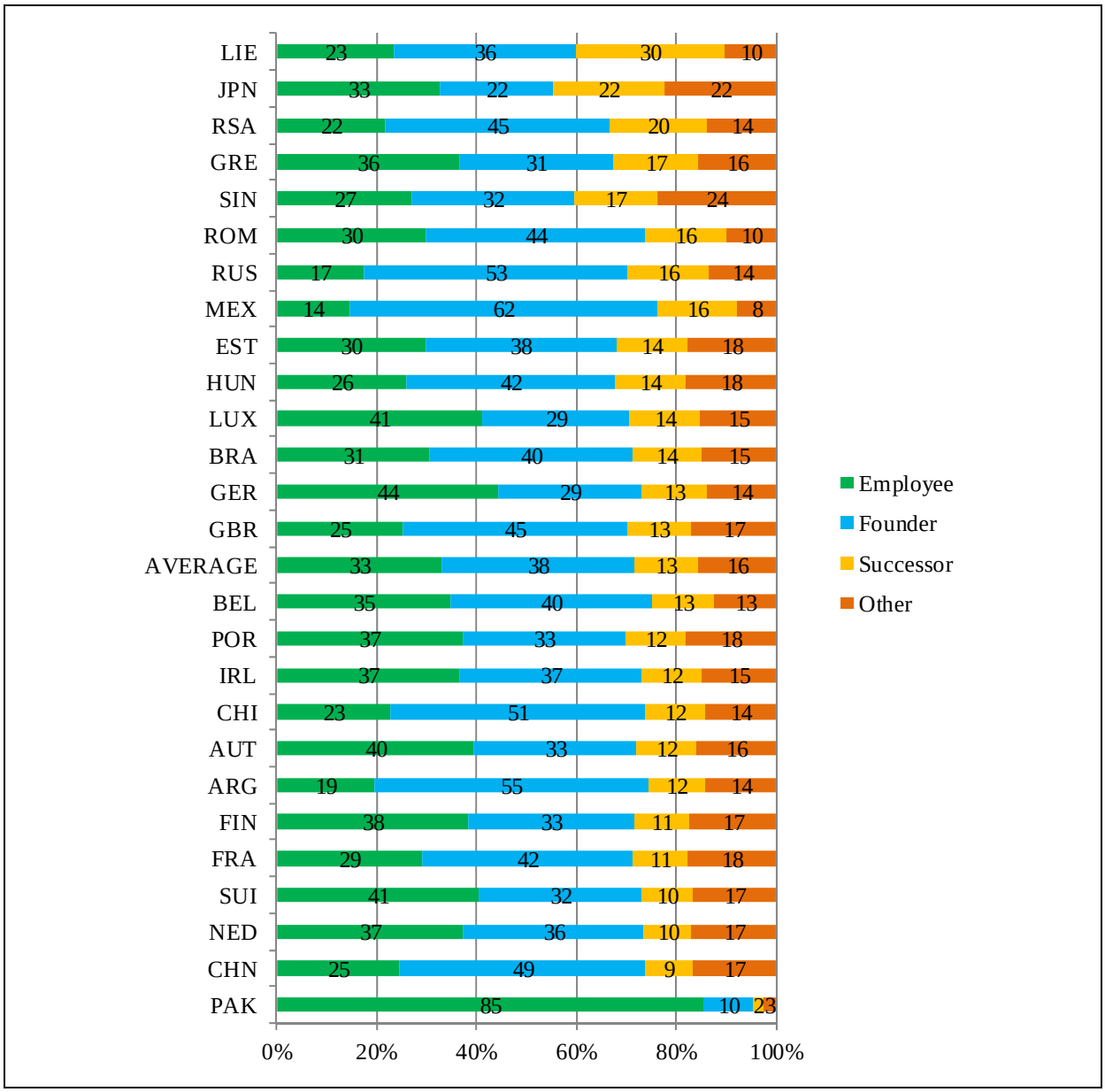

Figure 35: Career choice intentions five years after studies of students with family business background

We state that the share of intentional successors has increased up to 13% on average, with highest shares in Liechtenstein, Japan, and South Africa, and lowest shares in Pakistan, China, and the Netherlands. While the increase is certainly positive, the absolute share is a reason to worry for business families. Five years after completion of studies, less than every seventh student with family business background intends to take over his or her parents' business.

8 University context

One of the main themes that GUESSS is interested in is the role of Universities in the context of entrepreneurial intentions and activities of their students. First, we asked students if their University offers a variety of different lectures, seminars, networking platforms, and resources (answers: yes or no/do not know).

To get started, the following figure illustrates the frequencies of how often the different lectures, seminars, workshops, and platforms that we have been asking for were offered on global average.

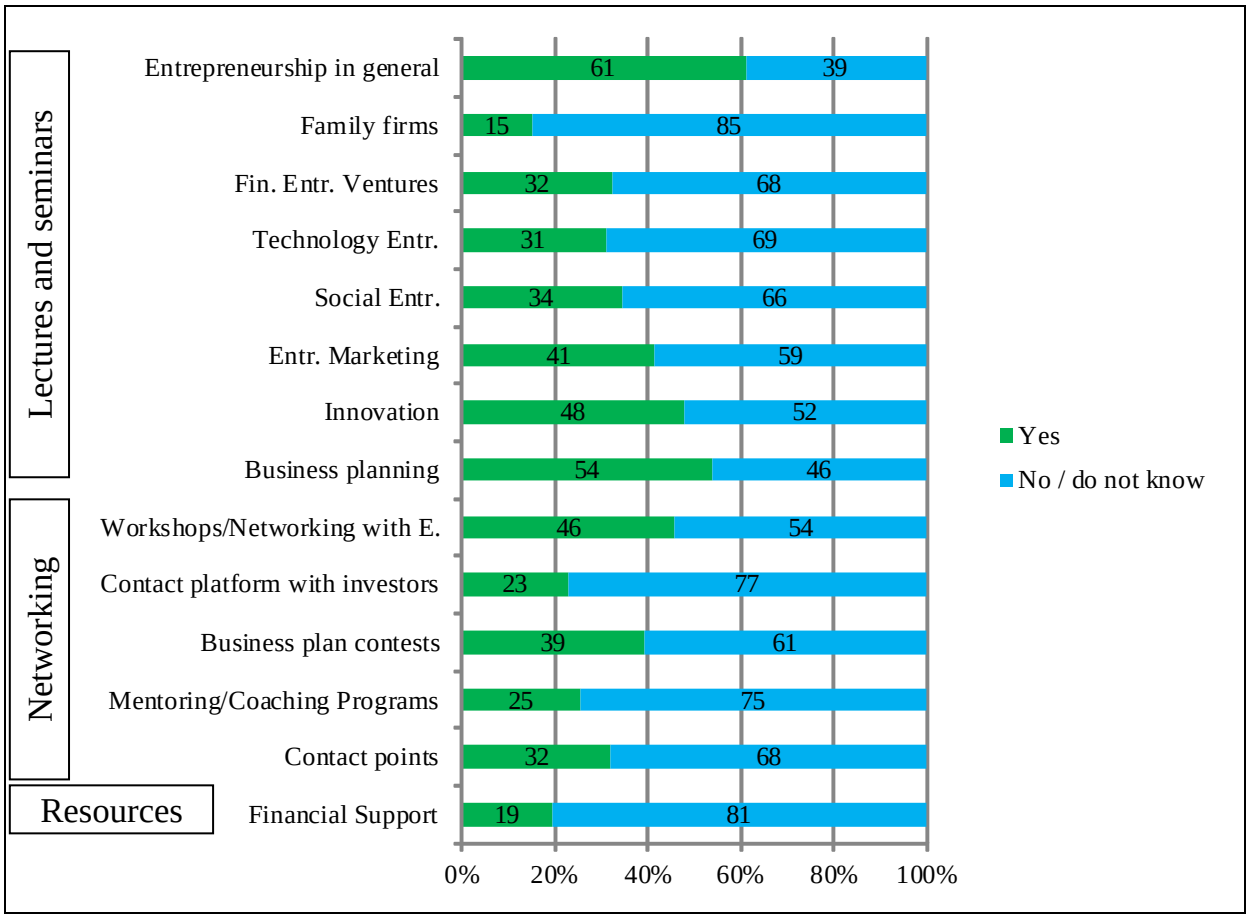

Figure 36: Entrepreneurship-related University offerings on a global level

We see that entrepreneurship lectures are quite established on a global level. Also offerings related to business planning, innovation, and networking platforms with experienced entrepreneurs are among the most common offerings. In turn, lectures on family firms, contact platforms with investors, and financial support for founders by the University, for instance in the form of seed funding, are not very well established.

The following tables illustrate the **average share of yes answers in percent** for each offering in every country. The richest variety of University offerings in general can be observed in

Mexico, Liechtenstein, and South Africa (last column).[19] Entrepreneurship-related offerings seem to be especially scarce in Luxembourg, Austria, and Germany.

	Entr. in general	Family firms	Fin. Entr. Ventures	Techn. Entr.	Social Entr.	Entr. Marketing	Innovation	Business planning	Work-shops with E.	Contact platform with investors	BP Contests	Mentoring / coaching	Contact points	Financial Support	Average
LUX	24	5	20	13	12	23	18	27	28	19	15	9	14	24	*18*
AUT	52	10	25	19	21	22	33	39	48	20	30	20	25	5	*26*
GER	56	9	28	18	14	14	30	39	50	18	38	29	35	7	*28*
ROU	52	10	32	15	20	45	31	50	35	21	32	13	16	26	*28*
ARG	45	15	26	39	42	27	45	34	31	11	32	12	27	24	*29*
GRE	59	9	29	32	28	48	36	32	41	9	23	22	23	18	*29*
HUN	68	7	42	14	13	52	24	58	20	23	37	14	14	33	*30*
JPN	62	7	29	20	39	53	36	44	31	17	40	21	19	9	*31*
SUI	50	14	34	20	25	30	40	46	52	25	37	24	26	13	*31*
BEL	63	9	34	27	30	36	42	53	49	19	40	29	27	32	*35*
AVE	*61*	*15*	*32*	*31*	*34*	*41*	*48*	*54*	*46*	*23*	*39*	*25*	*32*	*19*	*36*
NED	56	9	36	28	38	39	51	52	56	26	48	33	23	14	*36*
FIN	81	8	58	34	18	50	65	67	39	17	47	18	20	10	*38*
EST	78	8	45	21	27	49	47	64	38	19	40	39	40	19	*38*
BRA	65	23	24	42	49	53	58	62	40	20	31	20	38	21	*39*
UK	58	8	38	25	32	34	49	55	55	29	50	37	35	41	*39*
RUS	65	11	37	24	21	52	49	68	50	30	53	22	46	21	*39*
IRL	69	15	46	33	31	51	60	66	43	21	48	32	33	20	*40*
PAK	57	30	31	34	36	38	45	51	50	37	46	33	32	48	*41*
CHN	38	6	26	41	43	51	56	40	47	34	60	38	29	60	*41*
CHI	75	16	47	52	60	37	67	52	51	28	56	31	42	34	*46*
POR	68	16	41	60	48	48	71	52	58	42	57	37	39	40	*48*
SIN	69	13	47	50	48	57	59	59	63	31	59	44	32	54	*49*
FRA	88	25	65	39	46	59	73	67	65	34	59	47	58	25	*54*
RSA	81	22	61	47	52	72	66	79	48	35	48	48	44	56	*54*
LIE	75	39	60	42	53	69	57	79	71	43	84	45	52	11	*56*
MEX	94	76	68	78	80	59	82	87	67	46	70	70	65	51	*71*

Table 8: Share of yes answers regarding University offerings on a global level.

In order to meet the needs of students, it is essential for Universities to know the desires and preferences of their students in detail. Thus, in case an offering did not exist, we asked students if they would like to have such an offering. The average percentages of "yes, I would like it" answers for each offering (in case they do not exist) are illustrated in the following figure.

[19] Reading example: In Russia, 11% of all students indicated that lectures on family firms are offered at their University.

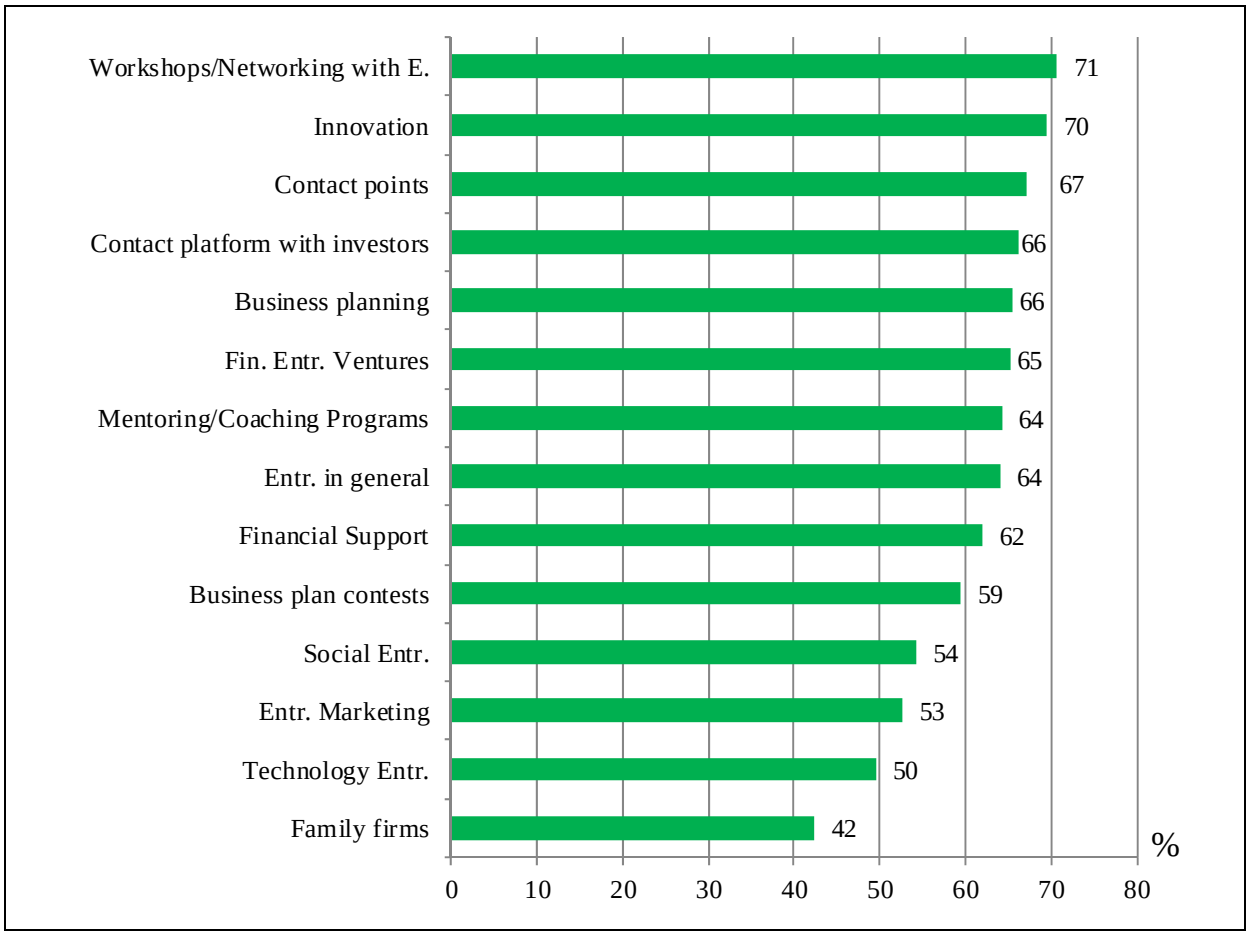

Figure 37: Average share “I would like it” answers for offerings on global average

The analysis shows that the strongest demand overlap exists regarding workshops and networking with entrepreneurs, lectures on innovation, and contact points for entrepreneurial issues.

The following table lists students’ demands for every possible offering in each country. Viewing students' desires as a whole, it has to be noted that the average strength of desire in case of missing offerings in the entrepreneurship context is strongest in Romania, Pakistan, Mexico, and Chile.[20]

To assess the quality of existing University offerings, we asked students how satisfied they were with the offerings that they attended / made use of (1=not at all, 5=very much). The average ratings for all offerings on global average are reported in the figure following the next table.

[20] Reading example: When lectures on entrepreneurship where not offered, 54% of the students indicated that they would like such an offering in Germany.

	Entr. in general	Family firms	Fin. Entr. Ventures	Technology Entr.	Social Entr.	Entr. Marketing	Innovation	Business planning	Workshops with Entr.	Contact platforms with investors	Business plan contests	Mentoring/Coaching	Contact points	Financial Support	Average
GER	54	21	57	33	32	30	53	54	59	50	44	52	59	52	46
NED	53	20	41	28	53	41	59	52	63	53	41	55	49	46	47
SUI	50	27	57	34	42	37	57	50	57	53	40	52	57	55	48
AUT	57	22	61	33	40	35	55	55	64	56	45	60	66	59	51
LIE	63	34	61	37	40	35	61	60	60	60	31	58	67	53	51
BEL	59	42	58	45	53	47	73	56	67	59	55	63	61	65	57
FIN	78	29	73	40	56	67	71	67	71	66	51	55	61	48	59
AVE	*64*	*42*	*65*	*50*	*54*	*53*	*70*	*66*	*71*	*66*	*59*	*64*	*67*	*62*	*61*
SIN	65	48	61	51	68	63	69	69	67	64	61	67	60	59	62
LUX	68	45	72	51	54	56	70	66	74	66	62	68	69	68	64
RUS	71	58	64	50	54	63	74	70	72	71	59	66	67	57	64
GBR	70	41	64	54	63	60	67	69	75	71	66	70	68	67	65
IRL	59	39	64	59	65	60	78	73	78	74	67	74	73	79	67
EST	72	54	73	45	64	63	83	74	84	81	59	74	75	74	70
POR	73	49	67	71	67	61	86	77	79	77	73	75	75	76	72
HUN	74	68	77	65	53	70	82	76	77	79	70	71	74	75	72
GRE	81	52	73	70	72	71	79	78	85	72	65	79	74	72	73
BRA	74	59	74	70	71	72	83	79	75	75	73	70	79	77	74
FRA	83	48	86	65	66	72	85	79	79	82	62	75	75	73	74
JPN	77	58	76	62	74	80	79	83	80	76	72	75	76	79	75
CHN	73	40	76	67	77	81	89	82	88	86	73	85	77	78	77
RSA	83	47	84	73	69	80	86	87	86	85	81	84	79	75	79
ARG	83	64	88	79	77	77	91	84	83	82	83	77	83	87	81
CHI	83	67	89	82	76	80	89	83	84	85	79	80	84	81	82
MEX	76	70	96	70	76	84	89	90	89	92	87	87	85	80	84
PAK	81	87	85	84	83	80	85	87	85	83	87	87	84	86	85
ROU	89	73	91	73	77	86	93	90	94	91	90	88	88	89	87

Table 9: Students' demand for University offerings per country

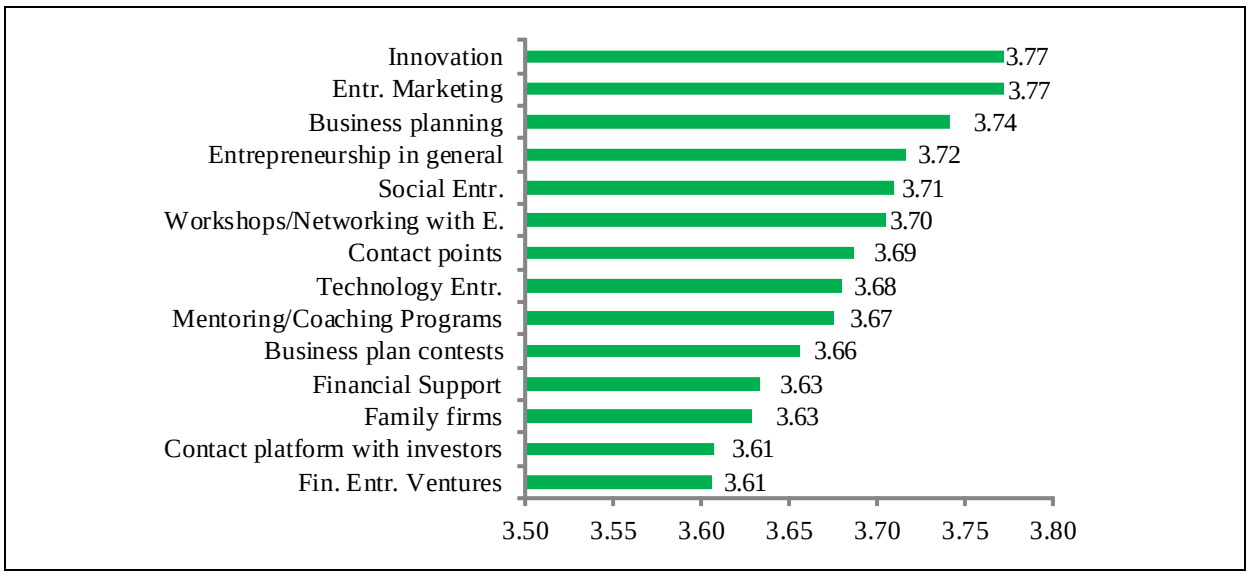

Figure 38: Level of satisfaction with University offerings

We see that the average ratings fluctuate between 3.6 and 3.8. Given the Likert-type scale from 1 (not at all satisfied) to 5 (very much satisfied), we observe an overall good, but not very good evaluation. The highest ratings are achieved by innovation and entrepreneurial marketing lectures, whereas the lowest scores are found for lectures on financing entrepreneurial ventures and contact platforms with investors.

The next figure shows the average overall assessment for all entrepreneurship-related offerings across countries. We see that the portfolio of attended offerings is most positively rated in Liechtenstein, Mexico, and Russia. The least favorable overall assessments are found in Pakistan, Greece, and Luxemburg.

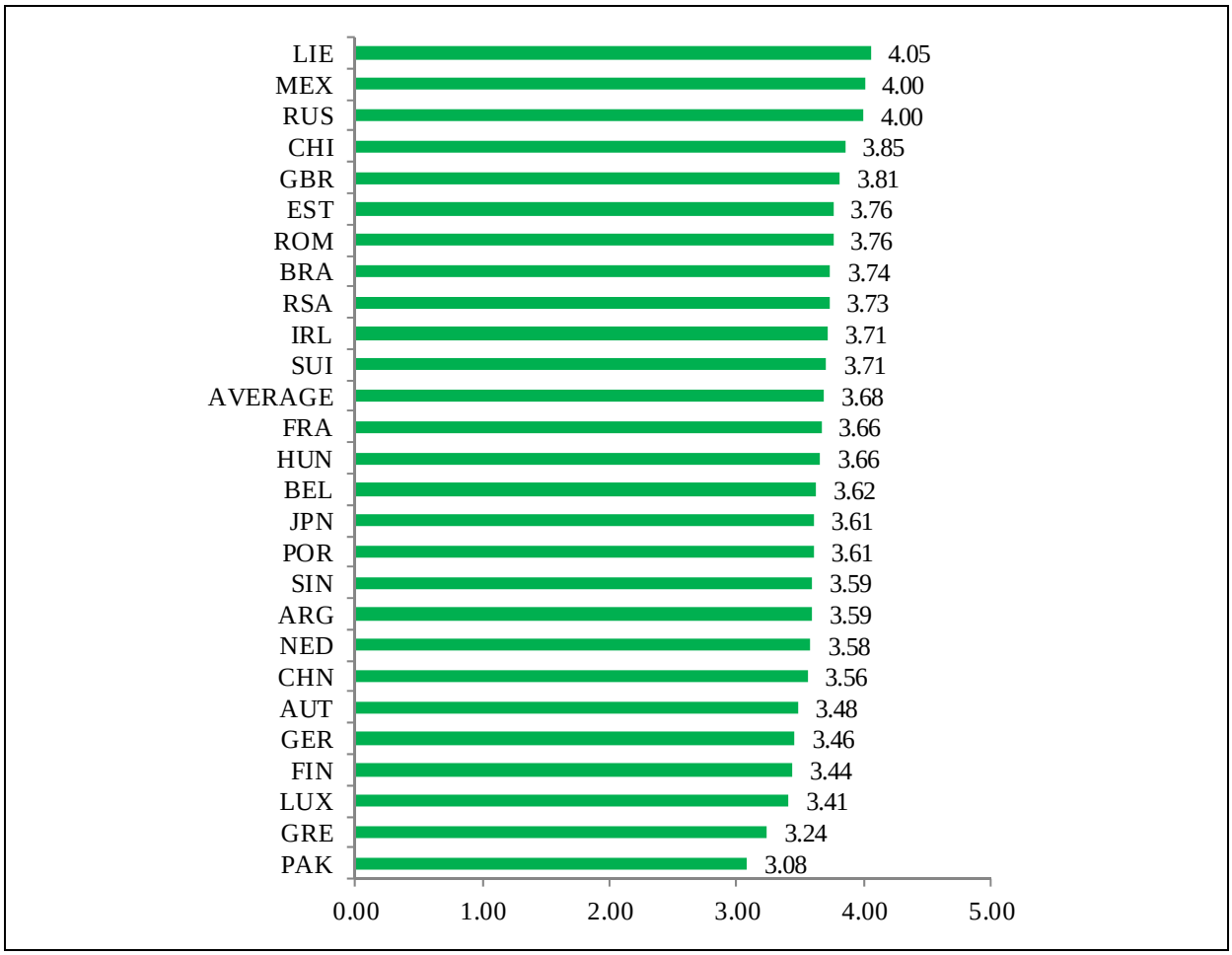

Figure 39: Assessment of all University offerings across countries.

To further increase our insight into the crucial role that Universities are playing in terms of fostering and channeling students' entrepreneurial intentions, we also asked students to indicate to what extent they agree with a few statements (1=strongly disagree, 7=strongly agree). These were referring to how helpful the University context in general was with regard to their entrepreneurial intentions and capabilities. The different items were combined to one measure (Cronbach's Alpha = 0.92). The item texts were the following:

The University offerings I attended increased my understanding of the attitudes, values and motivations of entrepreneurs.
The University offerings I attended increased my understanding of the actions someone has to take in order to start a business.
The University offerings I attended enhanced my practical management skills in order to start a business.
The University offerings I attended enhanced my ability to develop networks.
The University offerings I attended enhanced my ability to identify an opportunity.
There is a favorable climate and premises for becoming an entrepreneur at my University.
At my University I found many entrepreneurial-minded classmates.

Table 10: Statements regarding University context.

The following table illustrates the average values for each country.

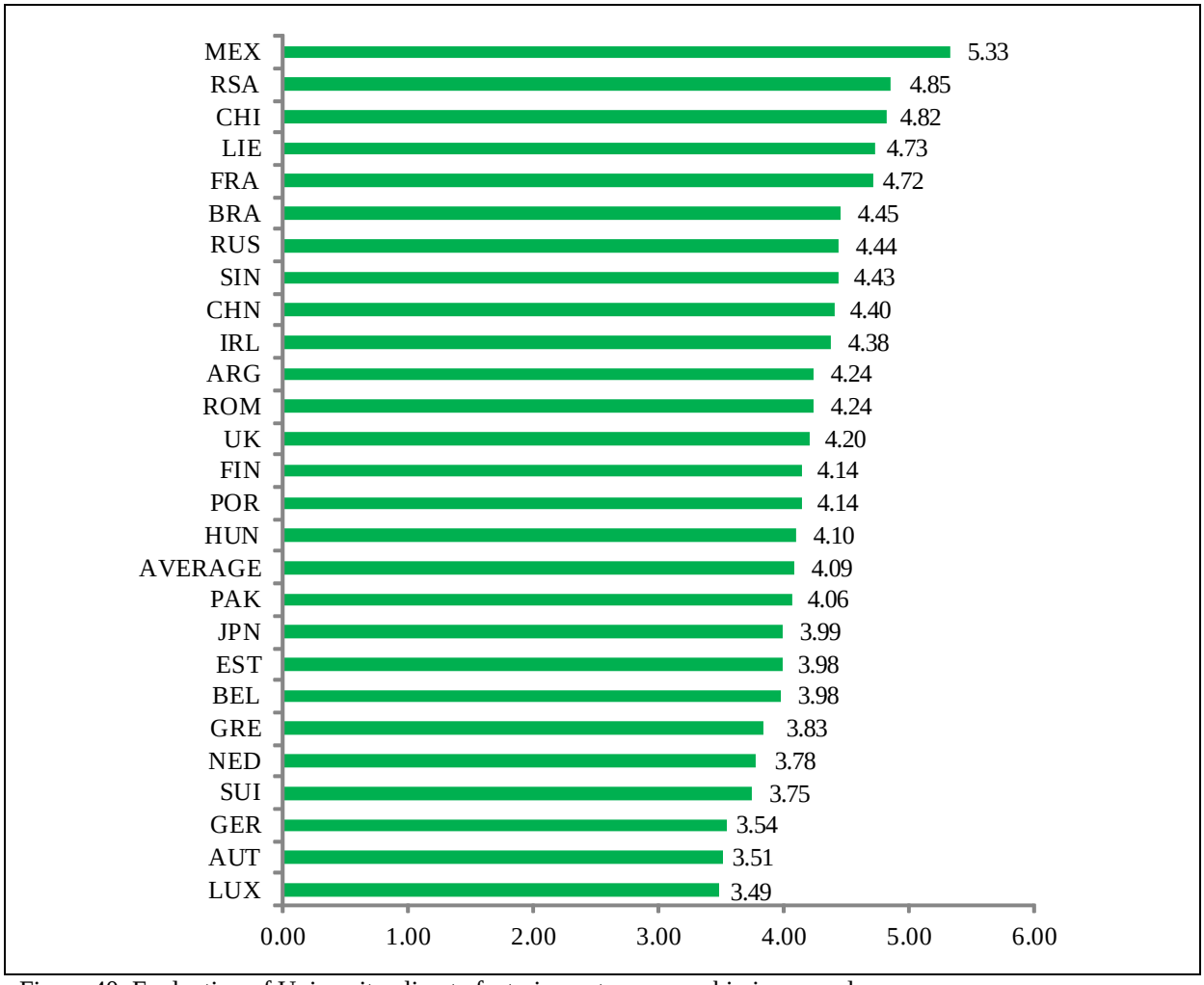

Figure 40: Evaluation of University climate fostering entrepreneurship in general

From the students' entrepreneurial perspective, the most favorable University environments can be found in Mexico, South Africa, Chile, and Liechtenstein. However, this finding has to be treated with caution, as the number of Universities observed in these countries is quite low. France and Brazil have achieved very positive evaluations with a high number of Universities taking part. University environments least conducive to entrepreneurial intentions and activities seem to exist in Luxemburg, Austria, Germany, and Switzerland. Except for Luxemburg, the number of observed Universities in these countries is high.

9 Summary of findings and implications

With the large-scale 2011 survey in 26 countries, GUESSS has generated numerous interesting macro-level insights that are summarized in the following.

- It is very difficult to generate truly comparable samples across countries, as they might differ by respondents' age, study level, and especially study field. This has to be taken into account when drawing comparisons between countries.
- In general, GUESSS 2011 has been able to compile a student sample that can be regarded as sufficiently representative of the global student population.
- On a global level, students prefer organizational employment directly after studies, whereas this preference weakens with regard to 5 years after studies.
- Founding an own company directly after studies has a relatively low importance. It increases significantly when asked for career choice intentions 5 years after studies.
- Career choice intentions in general vary significantly according to study field (Business & Economics, natural science, and social science).
- Business & Economics students can be classified as the most entrepreneurial student group, followed by natural science students and social science students.
- Regarding the motives of students, we believe that an entrepreneurial career seems to be able to satisfy the most important ones (e.g., realize own dream, achieve something).
- Intentional founders, successors, and employees differ with regard to their respective importance of different motives.
- The share of students who do not intend to found an own firm (non-founders) across the world is 42%, whereas the rate is highest in Finland, the Netherlands, and Japan. Intentional founders are strongly represented in Mexico, South Africa, Argentina, and Chile.
- The share of non-founders is highest among social science students, followed by natural science and B & E students.
- Out of the intentional founders, more than 64% have at least thought of a first business idea.
- On the global level, access to financial capital represents the most important barrier to founding a company, followed by bearing financing risk.
- Perceived barriers in total are highest in Singapore, China, and Japan, and lowest in Liechtenstein, the Netherlands, and Ireland.
- On average, students intend to invest approximately half of their weekly working time in their venture-to-be-founded.
- Regarding the number of partners that students intend to found their company with, 75% of all planned ventures will be founded alone or with only 1 partner.

- The entrepreneurship index differentiated by study field shows that the most entrepreneurial power as defined by the index among business students can be found in the UK, Estonia, Portugal, and Finland.
- Entrepreneurial power among natural science students is highest in Ireland, the UK, Mexico, and Argentina.
- Social science students with the highest entrepreneurial power live in Ireland, Finland, South Africa, and Portugal.
- We observe that around 30% of all students in our sample have a family business background.
- However, the share of intentional successors is alarmingly low, with only 13% on global average.
- Regarding University offerings, we see that a few offerings are well established, such as entrepreneurship lectures in general.
- The strongest demand overlap from the students' perspective can be observed regarding workshops and networking with entrepreneurs, innovation lectures, and contact points for entrepreneurial issues.
- Existing offerings are rated good on average, but not very good. Here, a lot of potential exists.
- Highest ratings for entrepreneurship-related offerings occur in Liechtenstein, Mexico, and Russia, and lowest ones in Pakistan, Greece, and Luxembourg.
- University environment in general is judged as being most favorable for entrepreneurial activities in Mexico, South Africa, Chile, and Liechtenstein.

A few key implications can be deducted from these findings for different stakeholders.

- Public
    - We show that student entrepreneurship can add value to society and economy in general, as seen with the jobs already created and to-be-created by students' entrepreneurial ventures.
    - It is thus imperative to further improve the basic conditions and regulatory frameworks for new ventures globally. The survey shows that especially access to financial capital is an important barrier to the foundation of new ventures.
    - The rate of students with family business background that do not intend to take over their parents' family firm within five years of completion of studies is very high. While raising their general awareness and attractiveness of this career path in general is a necessary condition, facilitating family-internal succession with more favorable legal preconditions, such as inheritance tax, is recommended.

- Universities
  - As shown, the range of entrepreneurship-related offerings should be extended, as demand overlaps for different offerings exist.
  - Offerings should be targeted to specific student groups (e.g., technology entrepreneurship to natural science students).
  - The quality of existing offerings should be improved, as current ratings are good, but not very good.
- Students
  - We encourage students to more explicitly think about an entrepreneurial career path. This is especially true for students with family business background. Taking over the parents' family firm is a promising career path.
  - Students are encouraged to actively voice their desires, preferences, and evaluations to their University.
  - In the long term, they can benefit from extended and improved offerings.
- Researchers
  - GUESSS 2011 shows the unique value that lies in collaborative, international research efforts.
  - Students' entrepreneurial intentions constitute a promising area of research, whereas theory of planned behavior is regarded as an appropriate theoretical foundation.
  - Promising avenues of future research are multivariate analyses and the role of institutional settings.
  - Given the heterogeneity observed in many samples, one has to be very careful not to draw premature conclusions.

10 Conclusion

With its fifth data collection wave, GUESSS has done another important step in contributing to existing knowledge on students‘ entrepreneurial intentions and activities on a global level. The present report offers a number of interesting insights that add value to a number of stakeholders. But still, there are many open questions, and GUESSS will attempt to contribute to answering them also in the future.

11 References

Ajzen, I. (2002). Perceived Behavioral Control, Self-Efficacy, Locus of Control, and the Theory of Planned Behavior. *Journal of Applied Social Psychology, 32*(1), 1-20.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior. An introduction to theory and research*. New York: Addison-Wesley.

Zellweger, T., Sieger, P., & Halter, F. (2011). Should I stay or should I go? Career choice intentions of students with family business background. *Journal of Business Venturing, 26*(5), 521-536.