



Global University Entrepreneurial Spirit Students' Survey



# Student Entrepreneurship 2016: Insights From 50 Countries

*International Report of the GUESSS Project 2016*

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Management

## Preface

Entrepreneurship is one of the most powerful economic forces in modern societies. Our future well-being thus critically depends on current and future entrepreneurial activities.

Young individuals, and particularly students, represent the entrepreneurs of tomorrow. It is thus imperative to know how many students intend to pursue an entrepreneurial career, why, why not, and how many are in the founding process or have already created a business.

The GUESSS Project (Global University Entrepreneurial Spirit Students' Survey) is dedicated to investigate this topic since 2003. This report provides detailed insights into the corresponding findings from the 7<sup>th</sup> data collection wave in the history of GUESSS. It was conducted in Spring/Summer 2016 in 50 countries, at more than 1'000 universities, and generated more than 122'000 completed responses.

The 2016 edition of GUESSS would not have been possible without the invaluable effort and support of all country teams, university partners, EY as the international project partner, and of course the students who responded to our survey invitation. Thank you!

We are already looking forward to the next GUESSS edition in 2018!

Yours sincerely,

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<p><b>Citation:</b></p>
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<p>Sieger, P., Fueglistaller, U., &amp; Zellweger, T. (2016). Student Entrepreneurship 2016: Insights From 50 Countries. St.Gallen/Bern: KMU-HSG/IMU.</p>
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## Executive Summary

What are students' entrepreneurial intentions across the globe, how many students are in the process of creating a business, and how many do already have an own business? And what are the drivers and characteristics of students' entrepreneurial intentions and activities?

The international report of the GUESSS Project 2016 provides answers to these questions based more than 122'000 completed responses from 50 countries and more than 1'000 universities.

Selected key findings are:

- 80.3% of all students intend to become employees directly after studies.
- 8.8% of all students intend to work in their own business directly after studies.
- 38.2% intend to work in their own business 5 years after completion of their studies.
- The share of intentional founders in developing countries is considerably higher than in developed countries.
- There is a “gender gap”: females have weaker entrepreneurial intentions than males.
  - The relative gender gap is 36.6% directly after studies but only 10.8% 5 years later.
  - The gender gap varies across field of study and countries.
- 55.4% of all students have not attended any entrepreneurship offerings at university so far.
- Students with entrepreneurial parents are more likely to intend to become entrepreneurs than students without entrepreneurial parents.
  - The relative difference is 33.6% directly after studies and 17.6% 5 years later.
  - This effect depends on the parents' entrepreneurial performance.
- In the 18 countries that took part in the GUESSS editions 2011, 2013/2014, and 2016, the share of intentional founders (5 years after studies) dropped from 34.8% in 2011 to 29.0% in 2013/2014 and raised to 30.1% again in 2016. This is a decrease by 16.7% followed by an increase of 3.7%.
- 21.9% of all students are in the process of creating their own business.
  - 34.9% of them plan to complete the business creation process within 1 year.
  - 18.6% intend to create the business alone; all others plan to have co-founders.
  - The founder social identities of nascent entrepreneurs (Darwinians, Communitarians, Missionaries) vary considerably across countries. “Pure Darwinians” seem to be particularly prevalent in Eastern Europe.
- 8.8% of all students already run their own business.
  - 28.7% of them have created the business alone, all others with at least one co-founder.
  - On average, these businesses employ 6.3 employees (full-time equivalents).
  - The entrepreneurs seem quite happy with their life as an entrepreneur (5.28 satisfaction on a 1-7 scale); 18.4% exhibit the highest possible level of satisfaction.

Taken together, the 2016 edition of GUESSS provides novel and unique insights into various important aspects of student entrepreneurship for numerous stakeholders.

# 1 Students' Career Choice Intentions

## 1.1 Specific Intentions and Career Groups

All students were asked which career path they intend to pursue directly after completion of their studies and 5 years later.

Taking a detailed look at all the specific career options, we see that seeking organizational employment in small, medium-sized, or large businesses are the most preferred options right after studies.

Entrepreneurial intentions (meaning the intention to create a new business)<sup>1</sup> increase more than fourfold between the two points in time. Almost 40% of all students that took part in the survey want to be an entrepreneur 5 years after completion of studies.

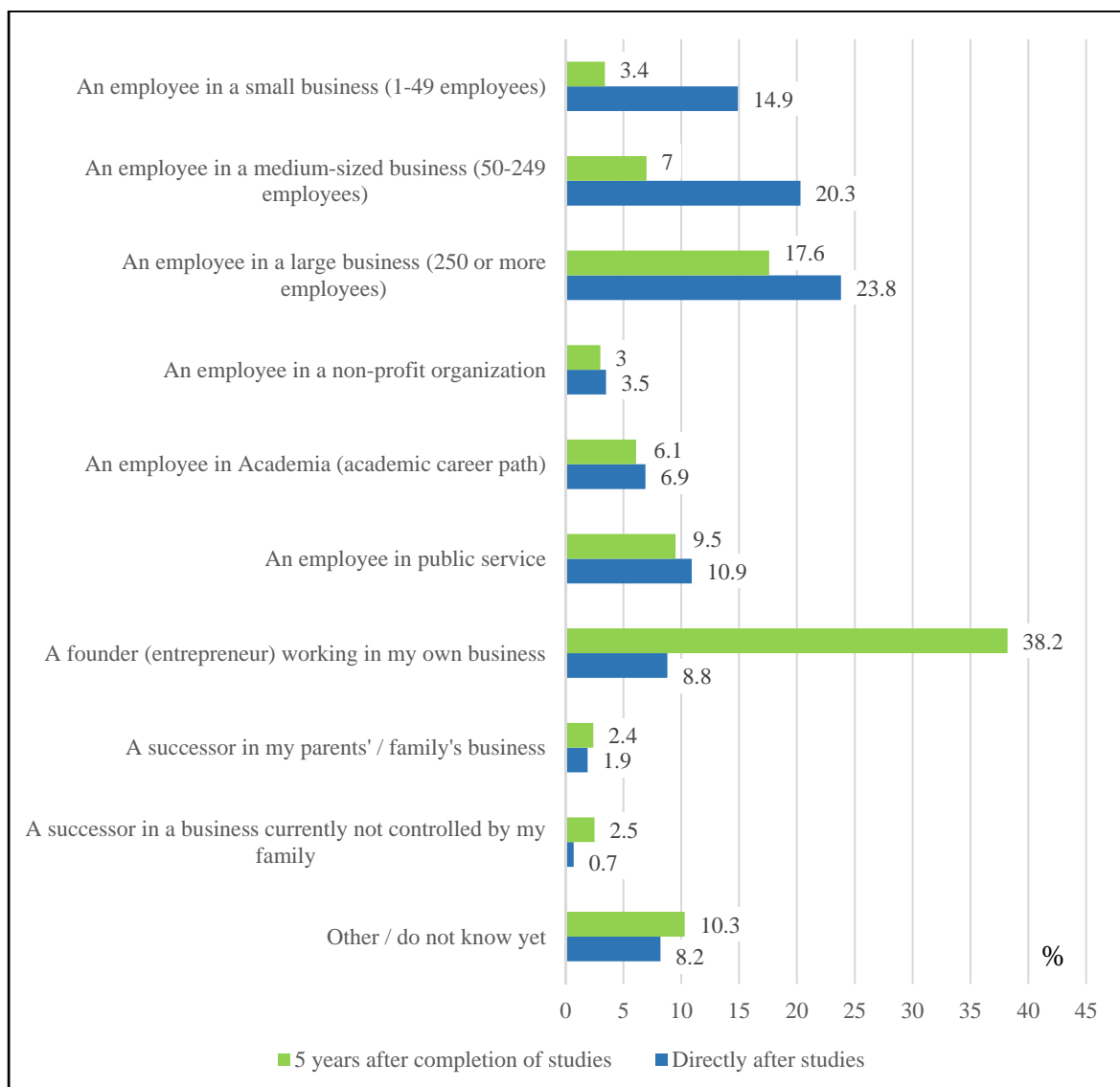


Figure 1: Career choice intentions in detail

<sup>1</sup> We use the terms “entrepreneurial intentions” and “founding intentions” synonymously. Strictly speaking, also becoming a successor in the parents’ firm or in another firm represents a type of entrepreneurial career; we do not refer to these options unless noted otherwise.

For a more general picture, we form three main career groups. Obviously, most students prefer organizational employment directly after studies, and many then plan to swing to an entrepreneurial career path within the next 5 years.

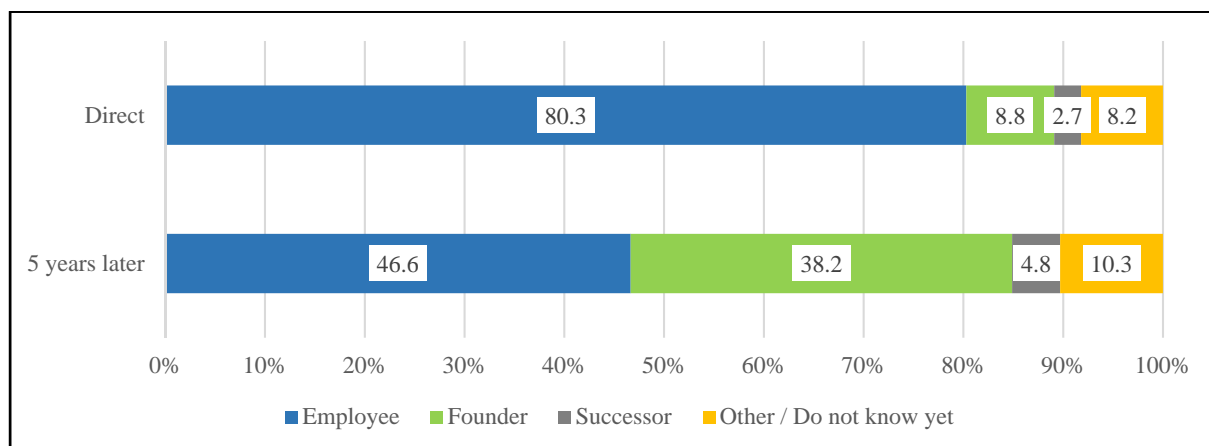


Figure 2: Career groups directly and 5 years after studies

## 1.2 Across Countries

Below, we look at the share of intentional founders (i.e., students who want to work in their own business) in the 50 countries of GUESSS 2016.<sup>2</sup>

While one has to be careful in interpreting these numbers because the country subsamples differ in terms of size, number and types of participating universities, and student demographics, we nevertheless conclude that intentional founders are particularly prominent in developing countries (and in particular, in Latin American countries).

Developed industrial countries tend to appear at the bottom of the list, which is a phenomenon already revealed in previous GUESSS editions (Sieger, Fueglistaller and Zellweger 2014).

The general pattern of “first employee, then entrepreneur”, however, appears in all countries independent of the level of economic development.

<sup>2</sup> For the meanings of the different nationality codes please refer to section 7.2.

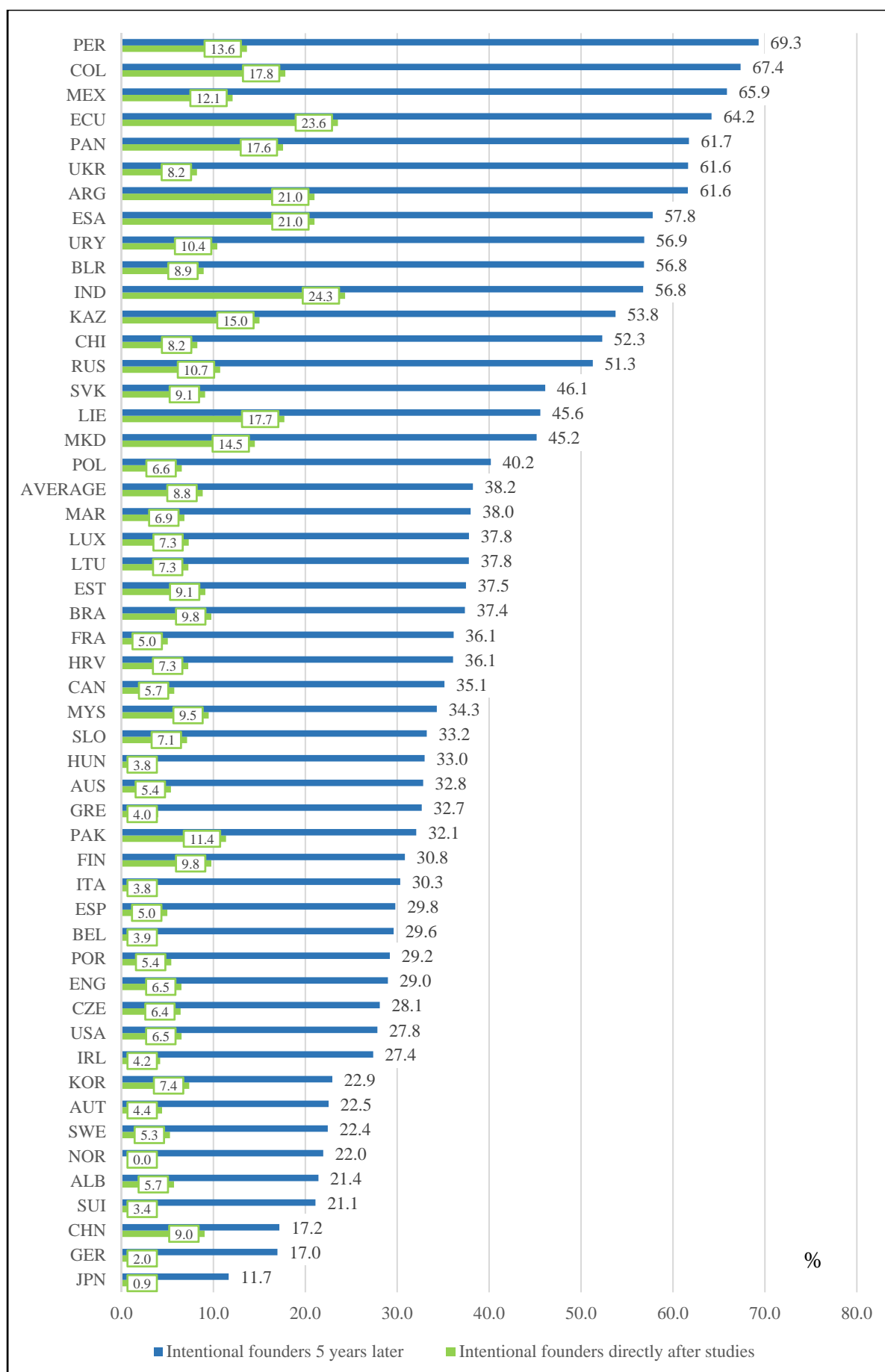


Figure 3: Share of intentional founders across countries

## 2 Influencing Factors

### 2.1 Field of Study

Entrepreneurial intentions clearly differ depending on field of study. Interestingly, science of art students have the strongest ones, which might be due to the specific job profiles in this field (e.g., working as an independent freelancer).

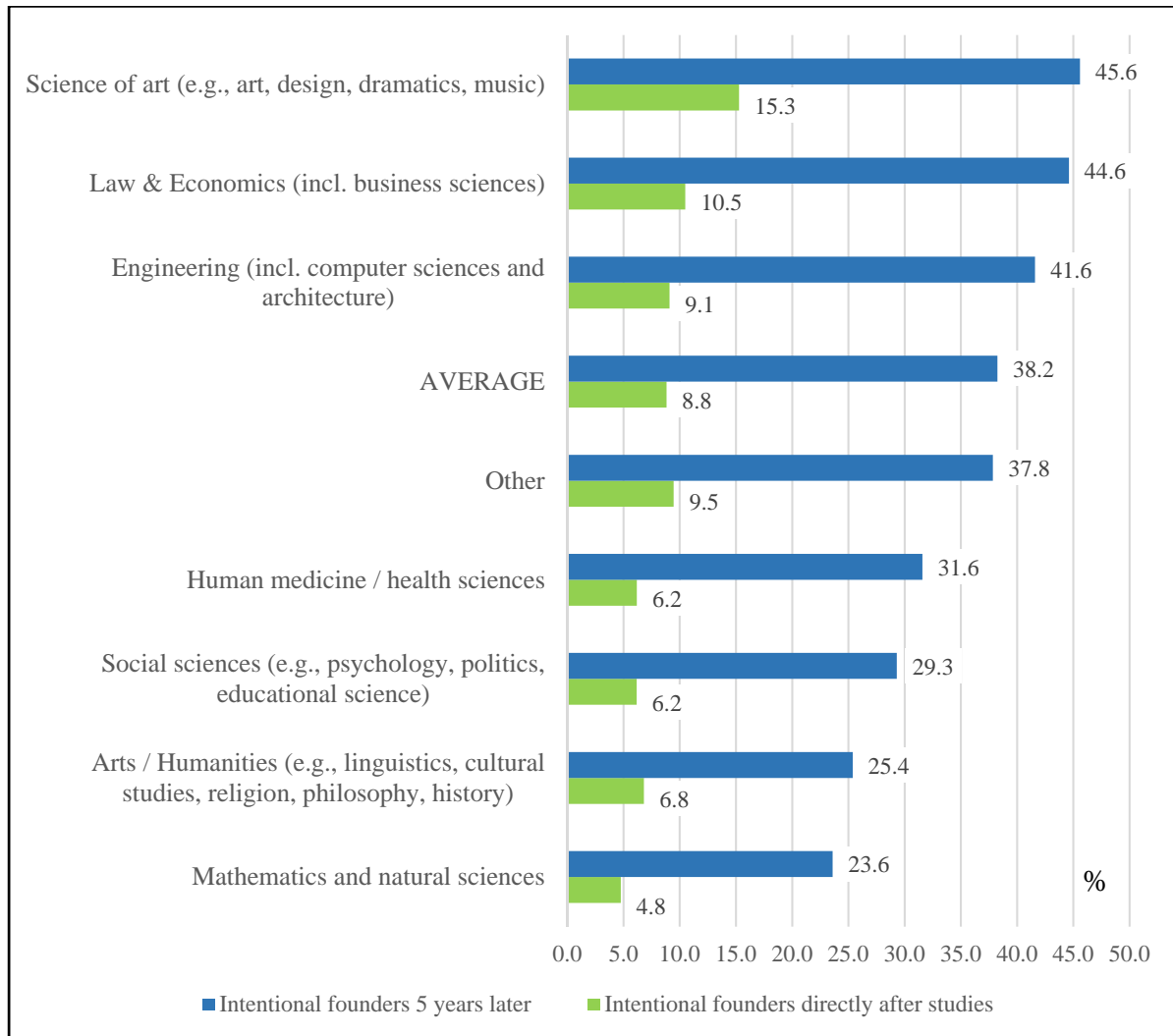


Figure 4: Entrepreneurial intentions depending on field of study

To compare countries without a potential field of study-related bias we now only look at “Law & Economics (incl. business sciences)” students (labeled LEBS) because they constitute the largest student group in our sample. We find obvious differences between countries when assessing the share of intentional founders 5 years after completion of studies.

The pattern found above is largely confirmed: the share of intentional founders is highest in developing countries (especially in Latin American countries), whereby industrialized countries tend to exhibit the lowest shares.



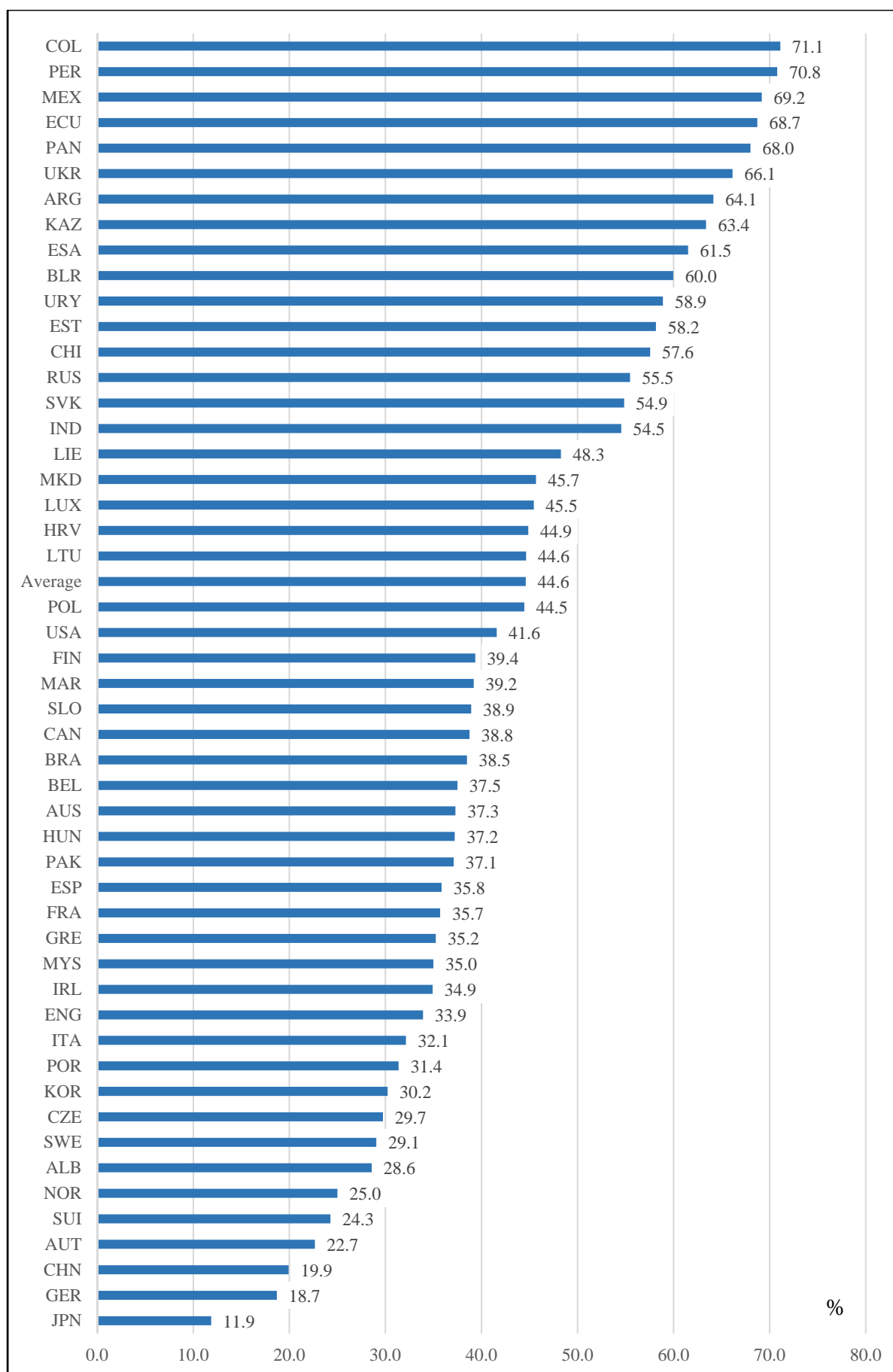


Figure 5: Intentional founders (LEBS students) 5 years after studies across countries

## 2.2 Gender

Both directly after studies and 5 years later, the share of intentional founders is considerably smaller among females than among males. Interestingly, the relative difference directly after studies is 36.6%; referring to 5 years later, it decreases to 10.8%.

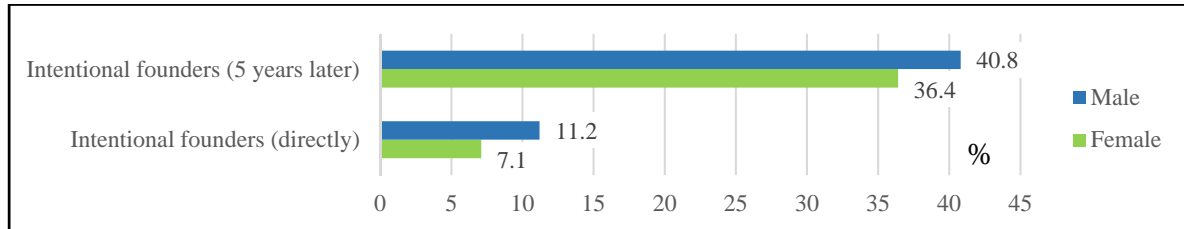


Figure 6: Gender differences in entrepreneurial intentions

Splitting the analysis by field of study and time horizon reveals that the share of intentional founders is always lower among females; however, the “gender gap” varies considerably.

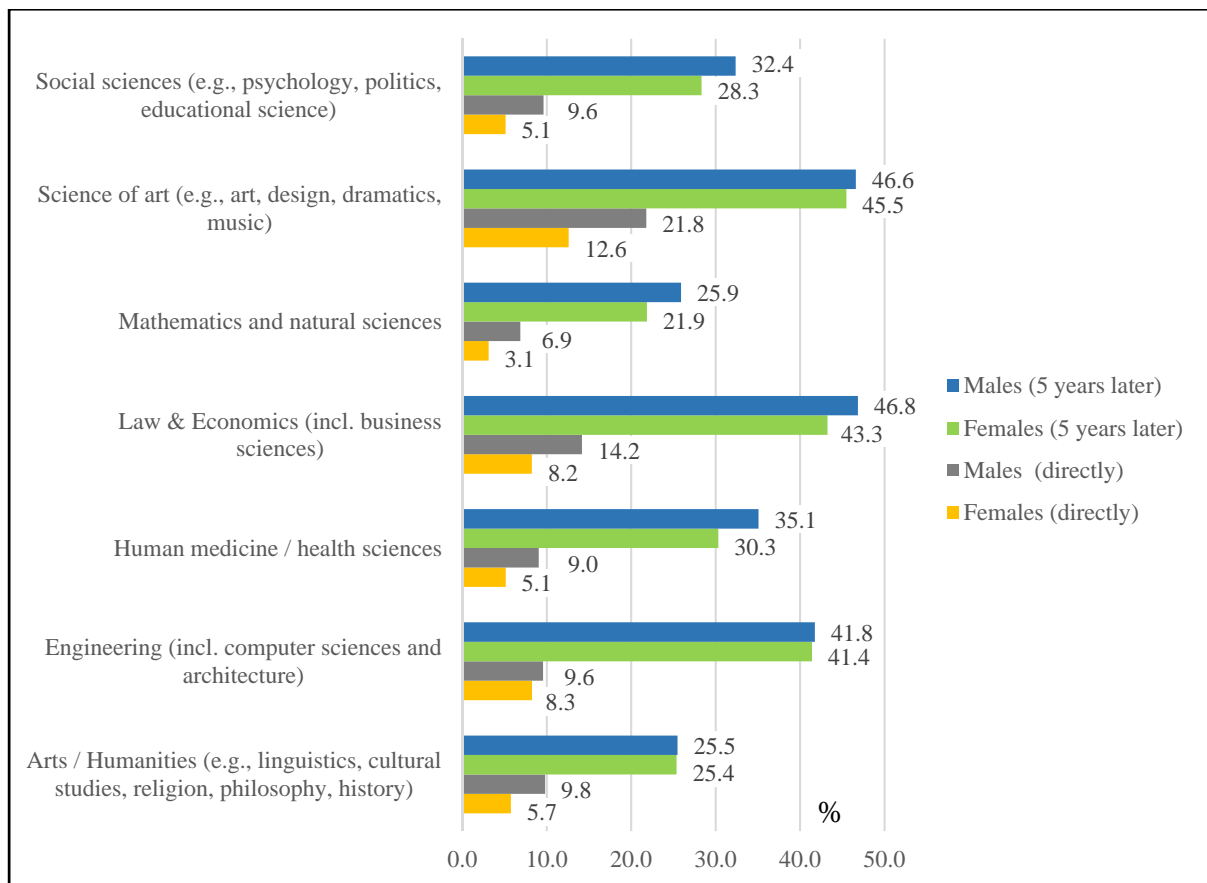


Figure 7: Gender differences in entrepreneurial intentions across fields of study and time

Comparing the shares of intentional female and male founders (5 years after studies) among LEBS students across countries reveals important differences. Interestingly, females exhibit higher values than males in some countries.<sup>3</sup>

<sup>3</sup> India, Malaysia, and Norway have been excluded because there were less than 10 cases per gender.

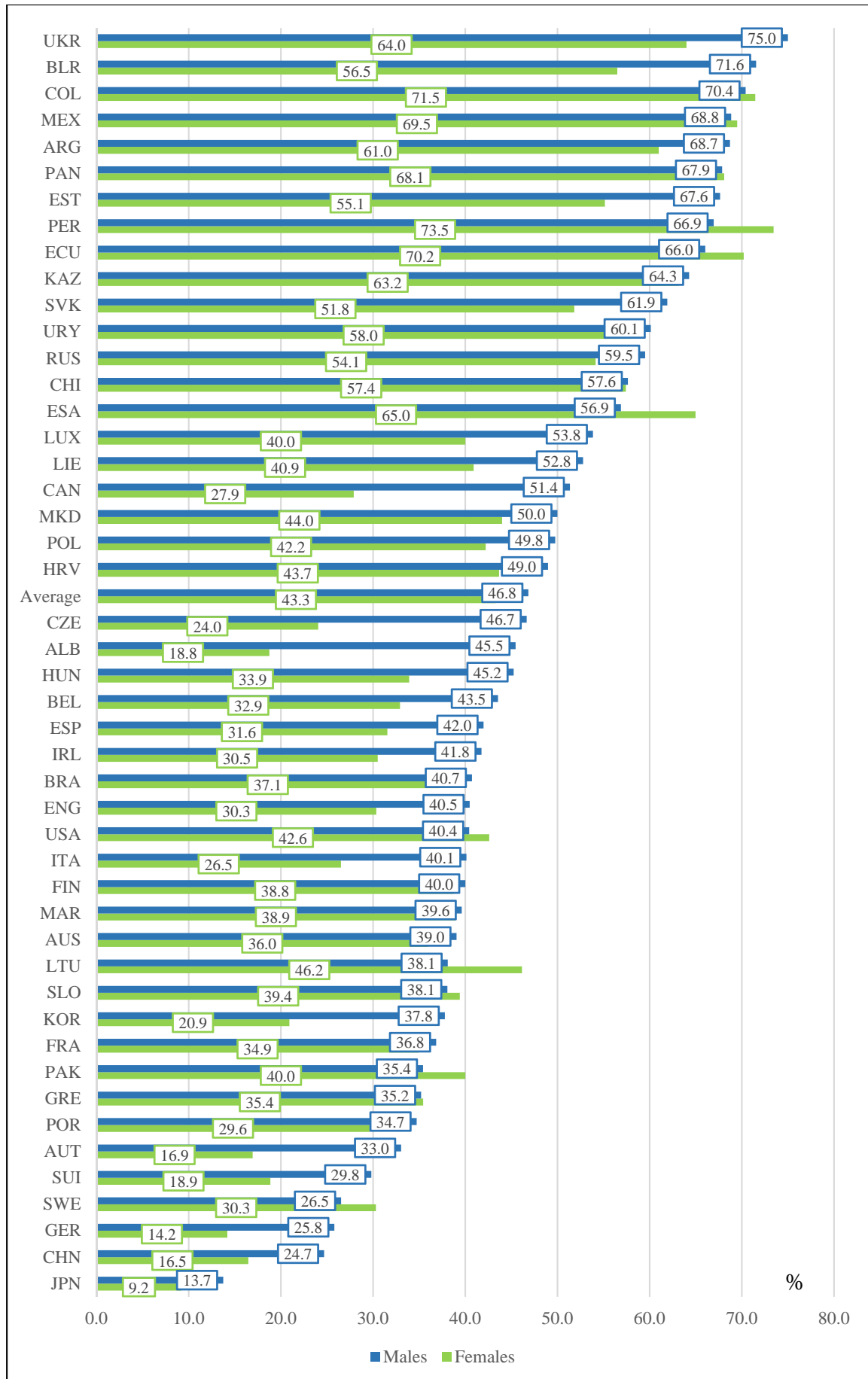


Figure 8: Gender gap among LEBS intentional founders across countries (5 years after studies)

Next, we sort the countries by size and type of the gender gap. A systematic pattern is rather difficult to detect, however. Positive numbers mean that the share of intentional founders is higher among males; negative numbers indicate the share is higher among females.

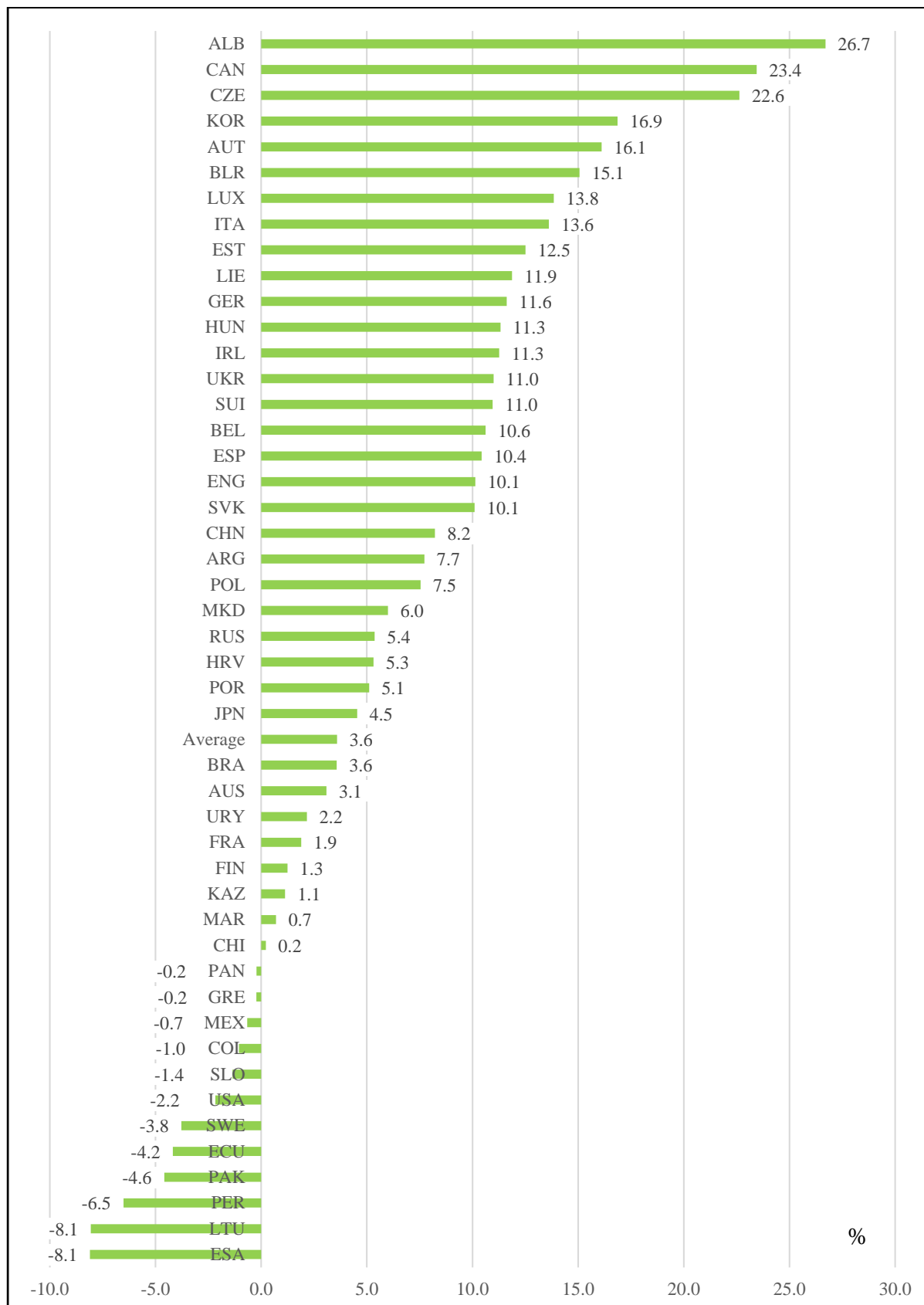


Figure 9: Countries sorted by gender gap among LEBS intentional founders (5 years after studies)

## 2.3 The University Context

How is student entrepreneurship affected by universities? To start with, more than half of all students in our sample have not attended any course on entrepreneurship yet. The others, however, seem to be quite intensively involved in entrepreneurship-related university offerings.

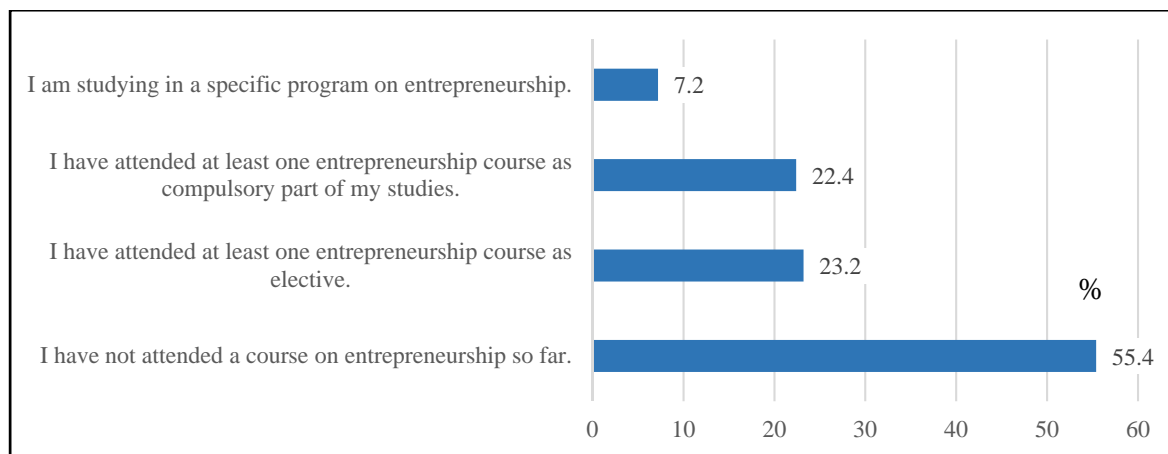


Figure 10: Attendance of entrepreneurship offerings

To check for the effect of entrepreneurship education, we calculated the share of intentional founders (5 years after studies) among students who ticked the respective options (multiple answers were possible).

The more intensive students' involvement in entrepreneurship classes and offerings, the stronger their entrepreneurial intentions. While we cannot exclude reverse causality (meaning that students with entrepreneurial intentions decide to attend entrepreneurship classes), this nevertheless points to the positive and important role of universities in forming students' entrepreneurial intentions.

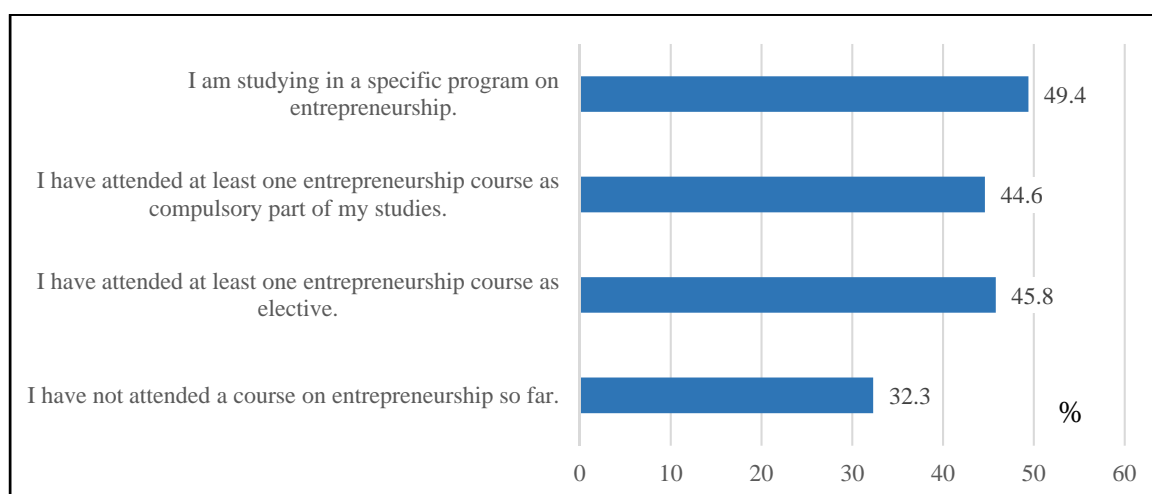


Figure 11: Share of intentional founders (5 years after studies) depending on entrepreneurship education

## 2.4 Personal Skills

Students were asked to indicate their level of competence in performing several different entrepreneurship-related tasks (1=very low competence, 7=very high competence).

Comparing intentional founders and intentional employees reveals that intentional founders indeed feel more confident in performing all of these tasks, in particular when it comes to identifying new opportunities and successfully managing a firm. Thus, building up these skills seems to be an appropriate way to enhance students' entrepreneurial intentions.

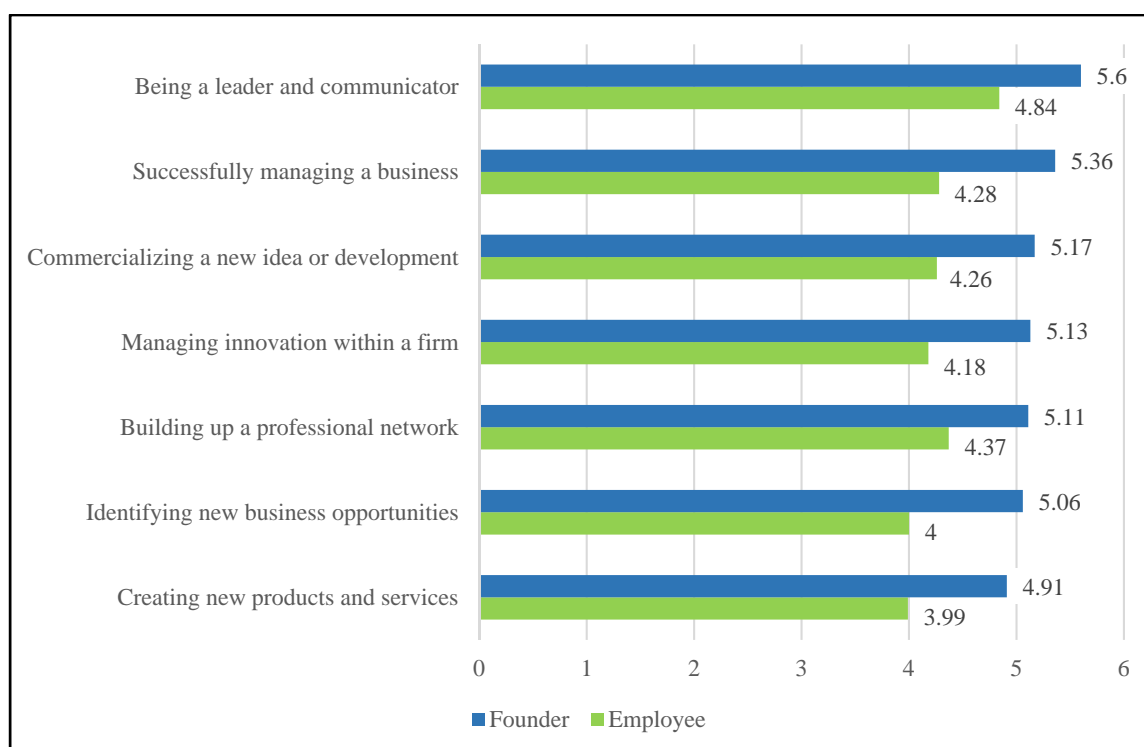


Figure 12: Skills among intentional founders and intentional employees (1-7 scale)

## 2.5 The Family Context

Scholars have long been interested in the question whether children of entrepreneurs have a higher propensity to become entrepreneurs themselves. 28.4% of all students have entrepreneurial parents (34'640), meaning that they indicated that at least one parent (father or mother) is self-employed and is a majority owner of a private business.<sup>4</sup>

Comparing the shares of intentional founders among children with and without entrepreneurial parents leads us to confirm the notion that there is a positive relationship between parents' and children's entrepreneurship (see the figure below).

The relative difference in entrepreneurial intentions is 17.6% (5 years after studies) and 33.6% (directly after studies). This means that the positive effect of parents' entrepreneurship is stronger in the shorter than in the longer run.

<sup>4</sup> We use both of these criteria to exclude cases where parents are self-employed but not business owners per se (e.g., independent journalists, artists, doctors, lawyers, etc.).

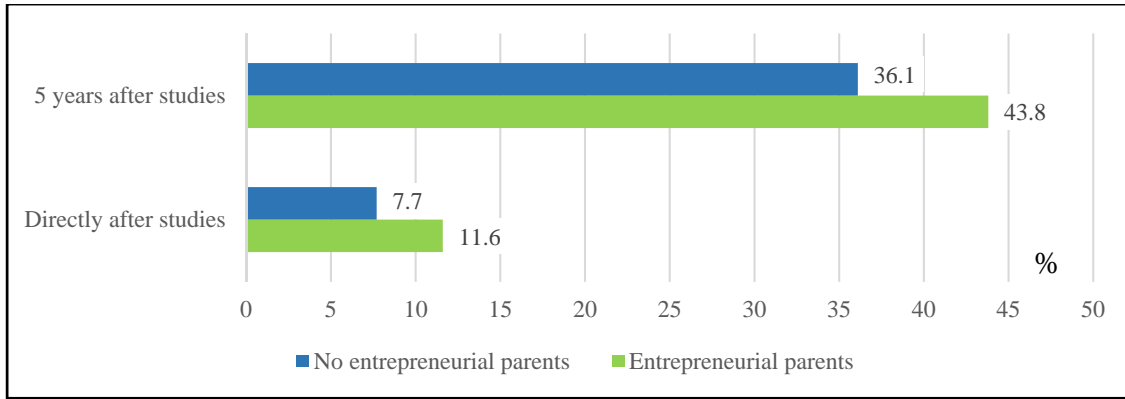


Figure 13: Share of intentional founders depending on parents' entrepreneurship

How does this effect depend on the parents' performance as entrepreneurs? Students with entrepreneurial parents were asked to assess their parents' firm's performance compared to its competitors over the last three years regarding sales growth, market share growth, profit growth, job creation, and innovativeness (from 1=much worse to 7=much better).

We took the average of the five indicated values and compared the share of intentional founders in different performance groups. Entrepreneurial intentions increase significantly when the performance of the parents' firm is assessed with better than 4 (i.e., better than equal to competitors). Interestingly, it does not make too much of a difference for entrepreneurial intentions whether the performance is only slightly or considerably below 4.

As a whole, these findings demonstrate the crucial relevance of parents as entrepreneurial role models.

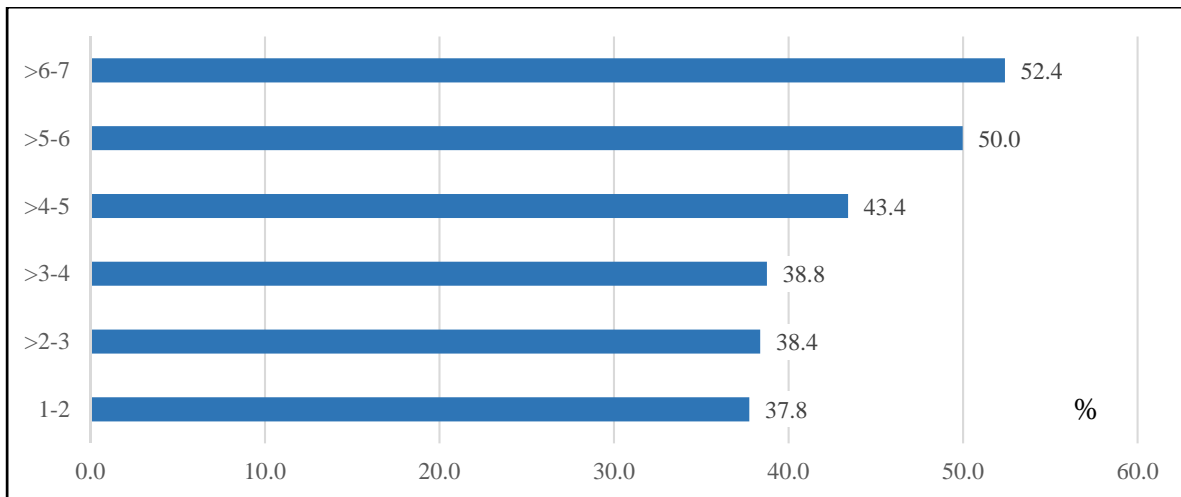


Figure 14: Share of intentional founders and parents' entrepreneurial performance (in ranges)

### 3 Entrepreneurial Intentions Across Time

How have entrepreneurial intentions developed over time? We compared data from the three previous GUESSS editions in 2011, 2013/2014, and 2016 by using only those 18 countries which participated in all three data collection waves.<sup>5</sup>

We see that entrepreneurial intentions (5 years after studies) have decreased quite considerably between 2011 and 2013/2014 (from 34.8% to 29.0%, which corresponds to a relative decrease by 16.7%). Afterwards, a slight increase can be observed (to 30.1%, a relative increase by 3.7%). However, the level of 2011 has not been reached again yet.

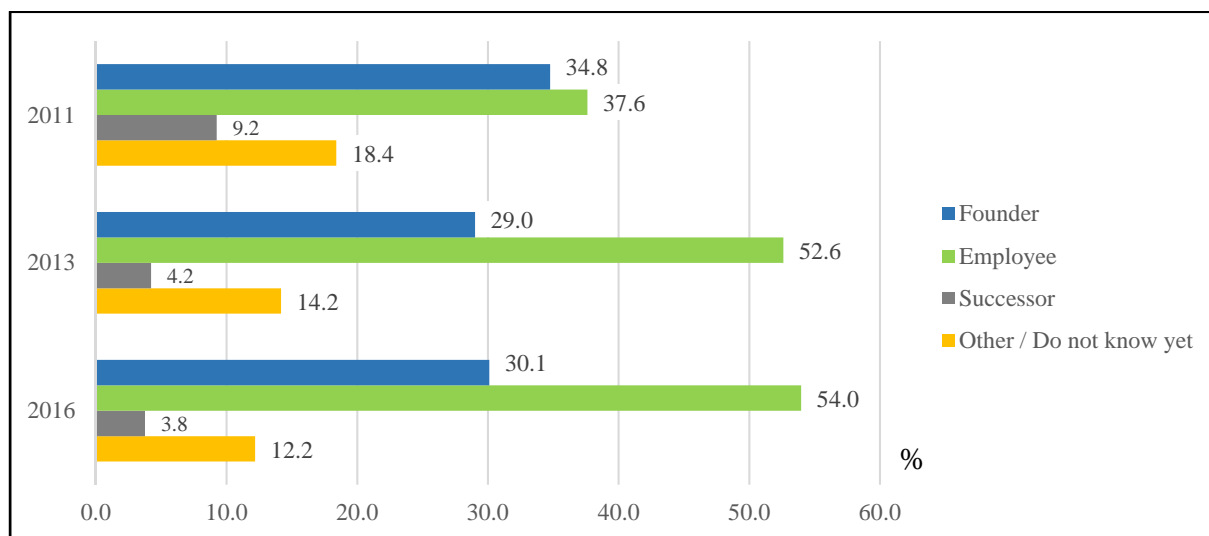


Figure 15: Career choice intentions in groups across time

A reason for the decline between 2011 and 2013/2014 could be that the overall economic environment in many countries has been more favorable in 2013/2014 (Sieger et al. 2014). It has thus been easier for students in 2013/2014 to find attractive job opportunities in the regular job market. Also, more and better entrepreneurship education offerings might have led to “less quantity but more quality”: students get better insights into what it actually means to become an entrepreneur, and some might then consciously choose not to create a new business; those who do intend to do so, however, are better prepared and motivated.

The slight increase between 2013/2014 and 2016, in turn, might be due to various factors like again changing economic conditions, raising awareness and appreciation of entrepreneurship in many countries, and so forth. Clearly, more research is necessary here.

In the 18 investigated countries, there are very different patterns of increasing and decreasing shares of intentional founders that call for further in-depth investigation on the country level.

<sup>5</sup> Argentina, Austria, Belgium, Brazil, England, Estonia, Finland, France, Germany, Greece, Hungary, Japan, Liechtenstein, Luxembourg, Mexico, Portugal, Russia, and Switzerland. 2011: 73'442 cases; 2013/2014: 54'394 cases; 2016: 54'204 cases. The number and types of participating universities within each country may vary, as does the number of responding students per university and country. However, the GUESSS country teams remained stable, so we do not assume that there is a systematic variation with regard to the data collection procedure and in particular with regard to the university recruitment strategy. Thus, we believe that our longitudinal findings are reliable and valid. Nevertheless, they have to be interpreted with great care.



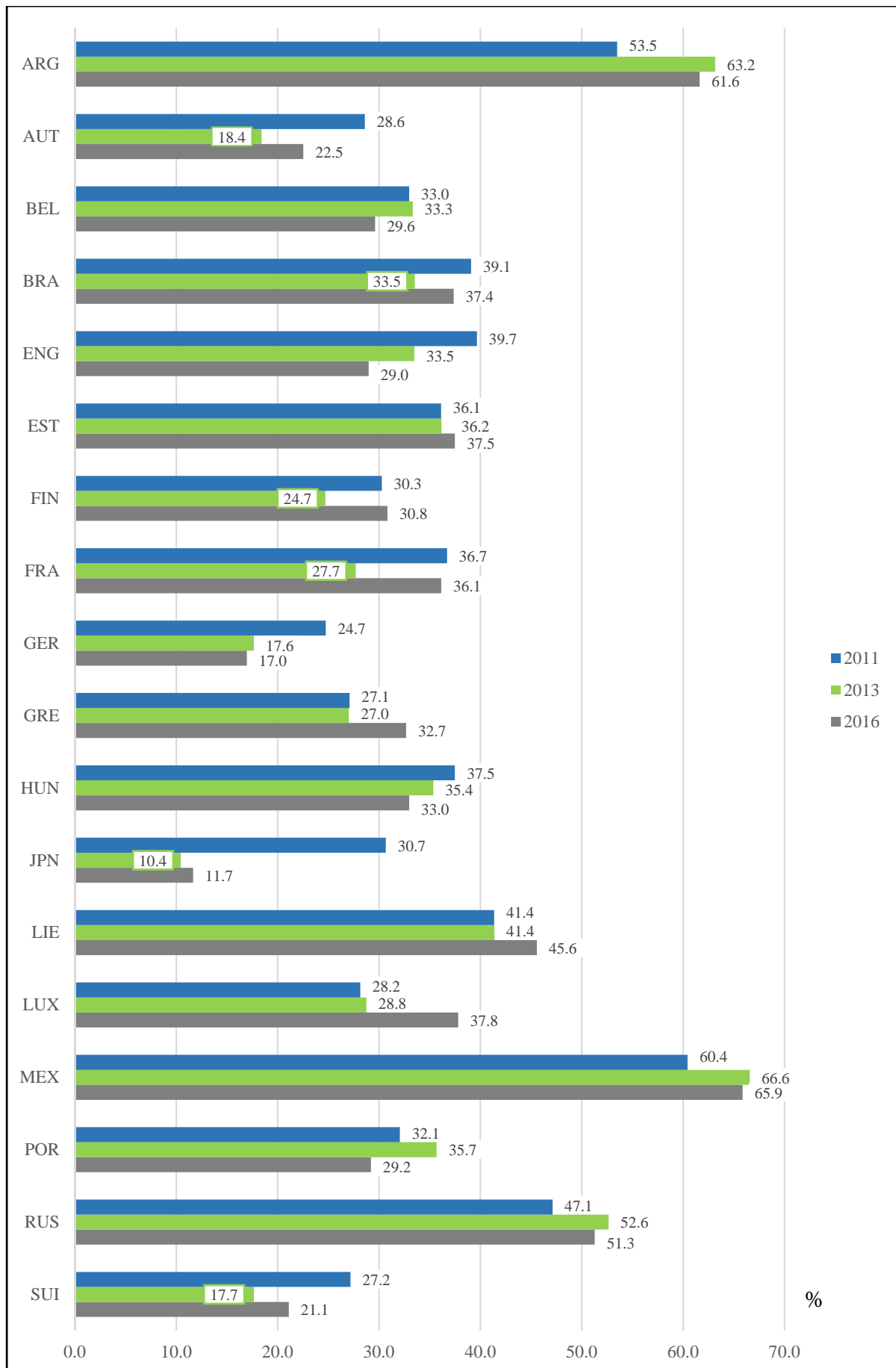


Figure 16: Shares of intentional founders (5 years after studies) across countries and time

## 4 Nascent Entrepreneurs

### 4.1 Prevalence

GUESSS is also interested in students who are already in the process of creating a business (nascent entrepreneurs). To identify them, all students were asked: “Are you currently trying to start your own business / to become self-employed?” 26’807 students answered with “yes” (21.9%). The share of nascent entrepreneurs per country is shown below.<sup>6</sup>

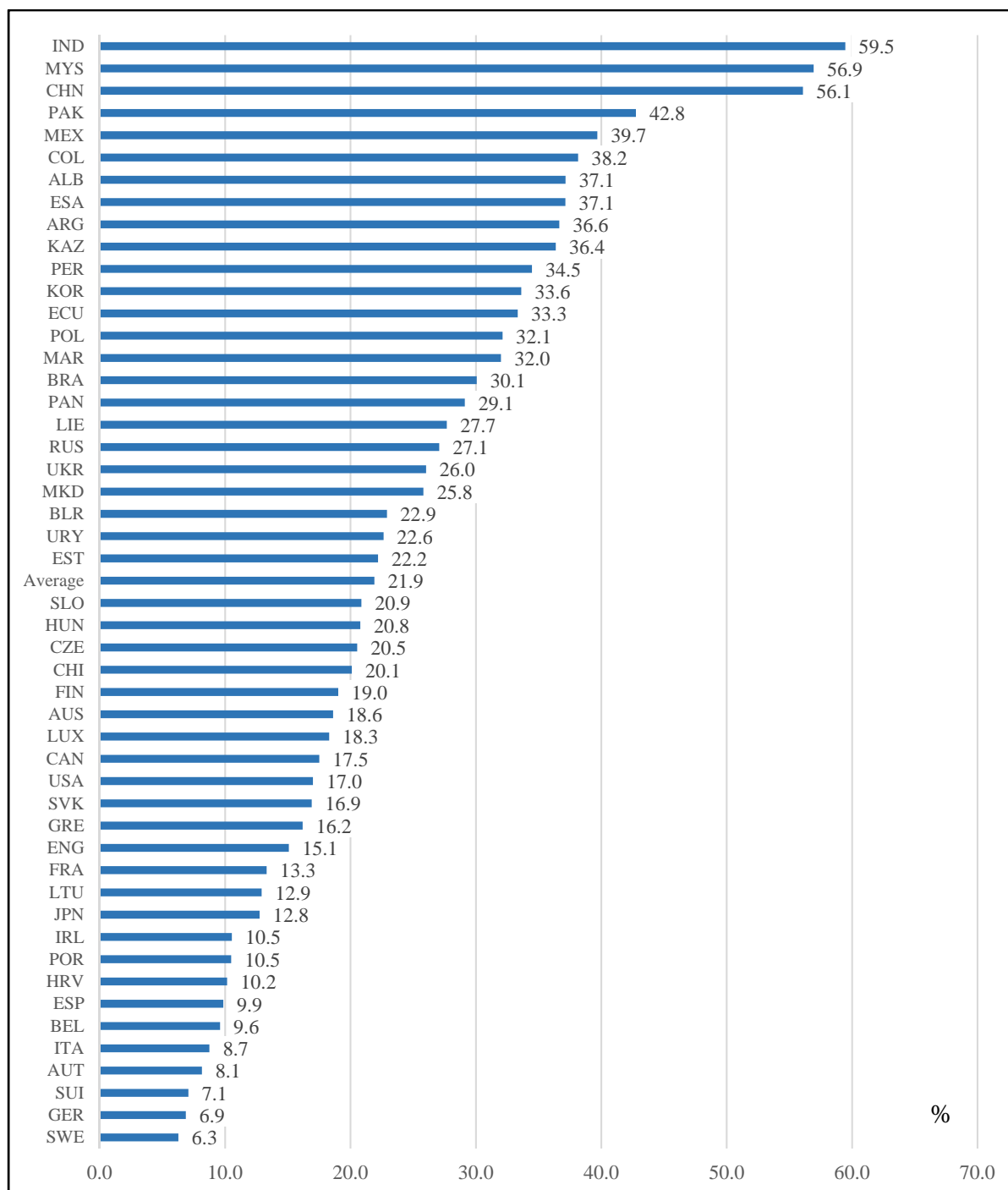


Figure 17: Share of nascent entrepreneurs per country

<sup>6</sup> Norway has been excluded due to a too small number of nascent entrepreneurs (<10).

As with entrepreneurial intentions, developing countries tend to be found at the top of the list; developed countries rather at the bottom.

## 4.2 The Planned New Ventures

Only around every sixth nascent entrepreneur wants to complete business creation within the next 1-6 months. Slightly more than half of all nascent entrepreneurs plan to do so within the next 18 months.

63.8% of the nascent entrepreneurs indicated that their business is planned to be their main occupation after completion of studies. 86% have not created a business before.

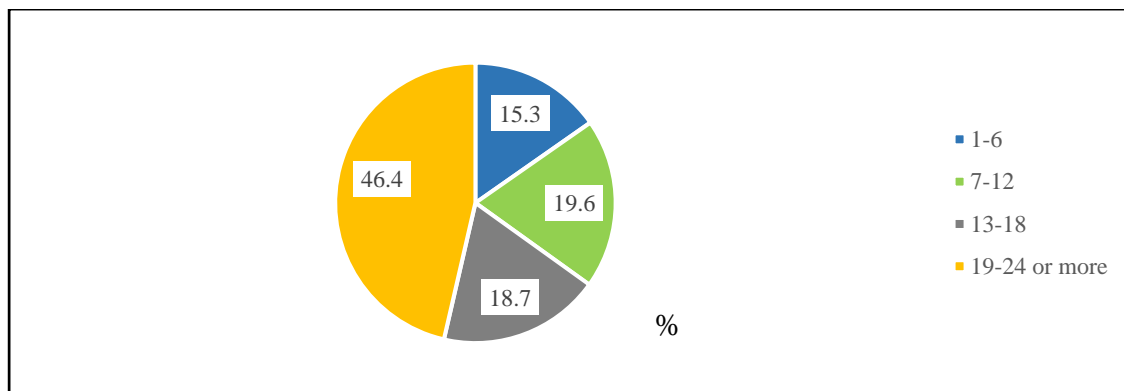


Figure 18: Time horizon of completing business creation (in months)

Looking at the industries where the new ventures will be active in, we see a very fragmented picture. Wholesale/ retail trade seems to be most attractive, with several others following closely.

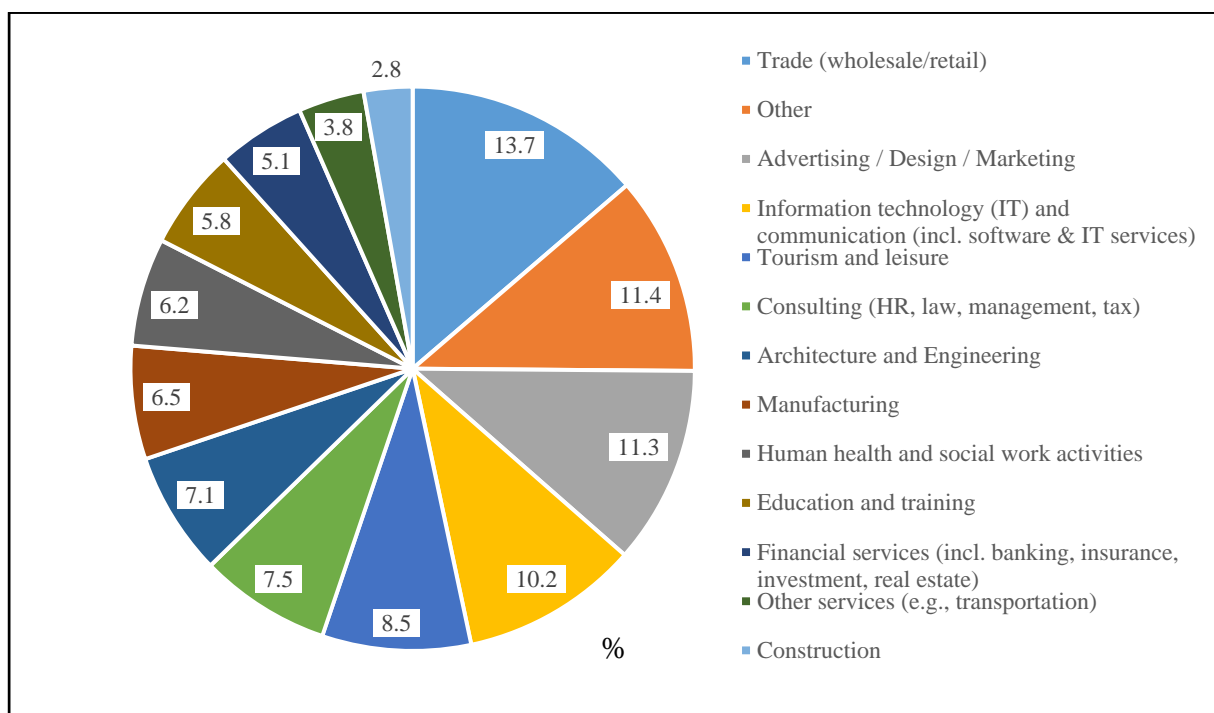


Figure 19: Industry sectors of planned new ventures

To assess how far the nascent entrepreneurs have already progressed in the founding process, they were asked to indicate which so-called “gestation activities” they had already executed (multiple answers possible). As shown below, most nascent entrepreneurs seem to be in quite early stages of the founding process.

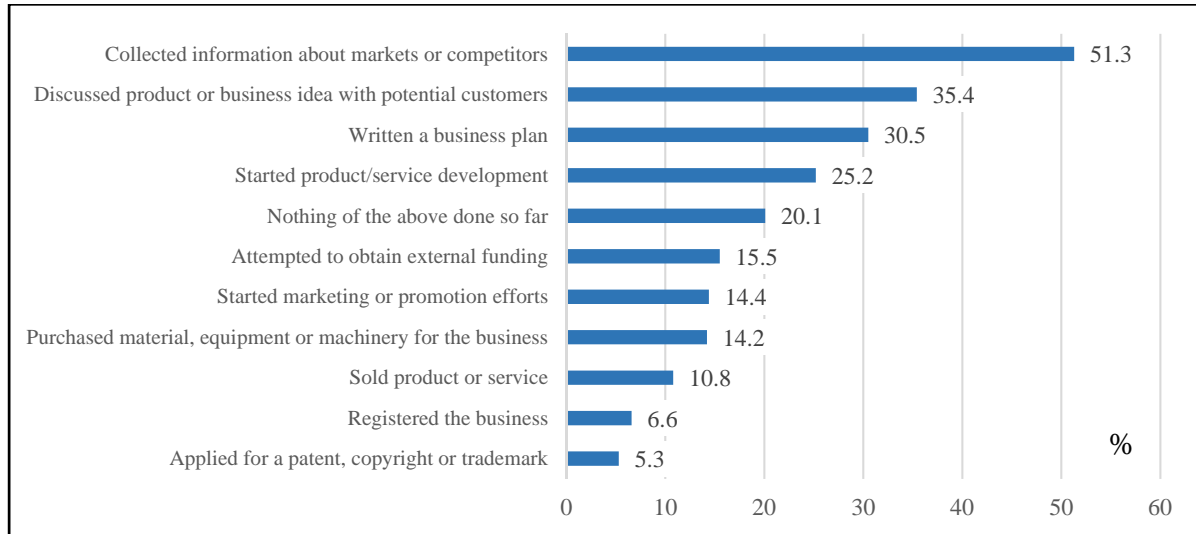


Figure 20: Gestation activities of nascent entrepreneurs

New venture creation more and more happens in teams; this is also visible in our sample where not even every fifth nascent entrepreneur indicated that he or she will create the business alone. Most common are one or two co-founders.

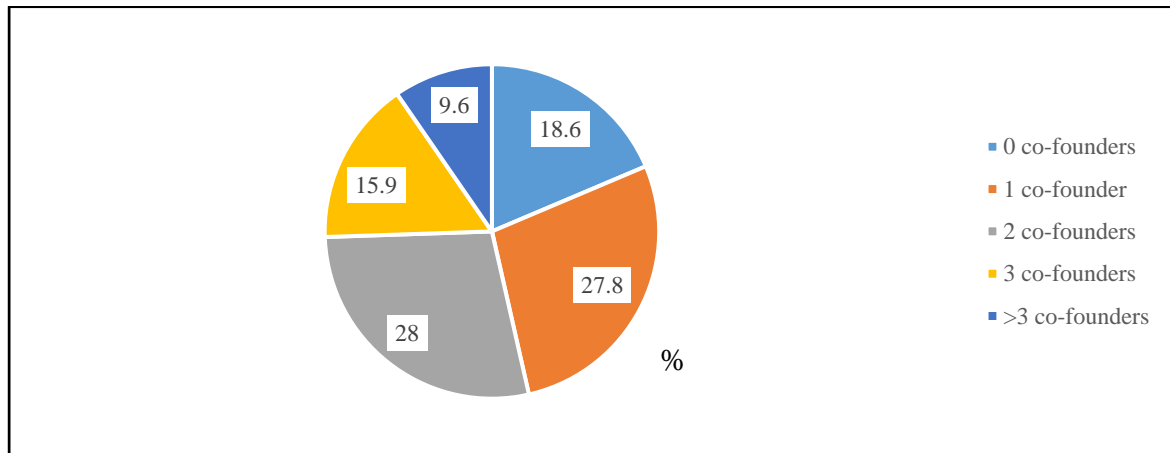


Figure 21: Number of planned co-founders

Where do the nascent entrepreneurs have their business idea from? Good news for universities is that in most cases, the idea was developed in the university context. Taken together, university studies, discussions with other students, and university-related projects are frequently mentioned (multiple answers possible).

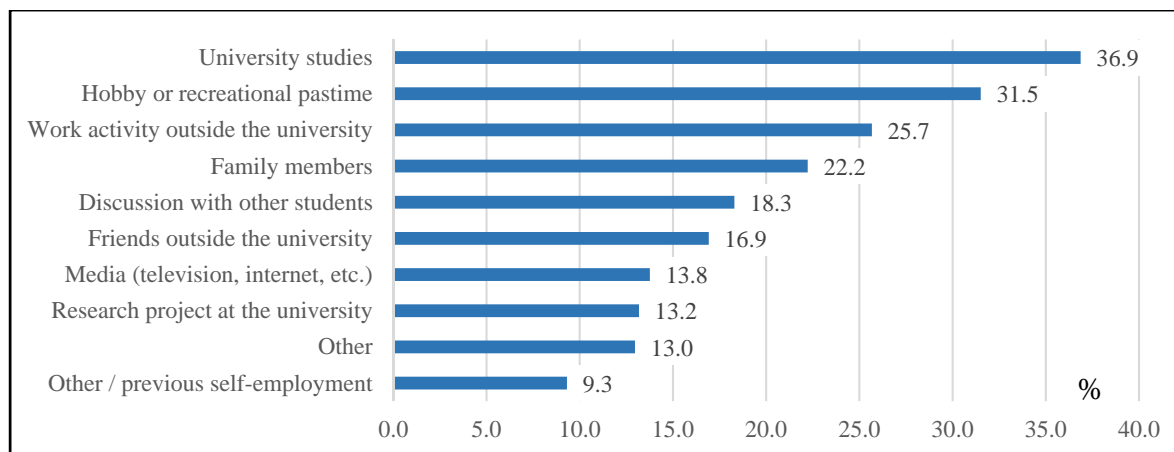


Figure 22: Origins of ideas of nascent entrepreneurs

### 4.3 The Founder Social Identities of Nascent Entrepreneurs

What are the motives and goals of the nascent entrepreneurs, meaning why and for what purpose do they create their business? This will crucially affect the new ventures' behavior for instance in terms of products and services offered, customer segments served, innovativeness, growth, and performance.

To assess this, we refer to three main types of founders that have been identified according to their respective "social identity" (Fauchart and Gruber 2011; Sieger, Gruber, Fauchart and Zellweger 2016): *Darwinians*, *Communitarians*, and *Missionaries*.

*Darwinians* are generally motivated by self-interest, want to be evaluated in terms of being a competent professional, and see competitors as the primary frame of reference. Their firms thus resemble a classic profit-maximizing and performance-oriented business.

*Communitarians* create a business out of mutual concern for the interests of known others, they want to be true to similar others, and see a specific group as frame of reference. An example is an entrepreneur whose business develops new skiing technology to enhance the skiing experience of fellow ski drivers.

*Missionaries*, in turn, want the business to advance a cause for unknown others, they want to contribute to make the world a better place, and see society-at-large as frame of reference. These firms often follow a political or ideological mission such as curing hunger or helping immigrants to find jobs.

In addition, "hybrid" identities may exist, meaning that founders exhibit two or more identities at the same time. We analyzed the share of *Darwinians*, *Communitarians*, *Missionaries*, and hybrids among the nascent entrepreneurs in the different countries by using a recently established 15-item measurement instrument (Sieger et al. 2016).<sup>7</sup>

<sup>7</sup> For the main identity types we used "pure identities". Respondents were regarded as having a "pure identity" when their agreement to all five items that measure one specific identity was at 5 or higher (on a 1-7 scale), with no such agreement to other identity types. Hybrids are respondents who exhibit the corresponding ">5" agreement for all items that belong to the same identity type for at least two different identity types. This logic has been adopted from Fauchart and Gruber (2011); see also Sieger et al. (2016). The gap to 100 percent is due to founders who neither exhibit a pure identity nor a hybrid identity.

We excluded countries with less than 50 nascent entrepreneurs to improve the validity and reliability of our findings.<sup>8</sup> The two figures below show the results sorted by the total percentage of identified identities.

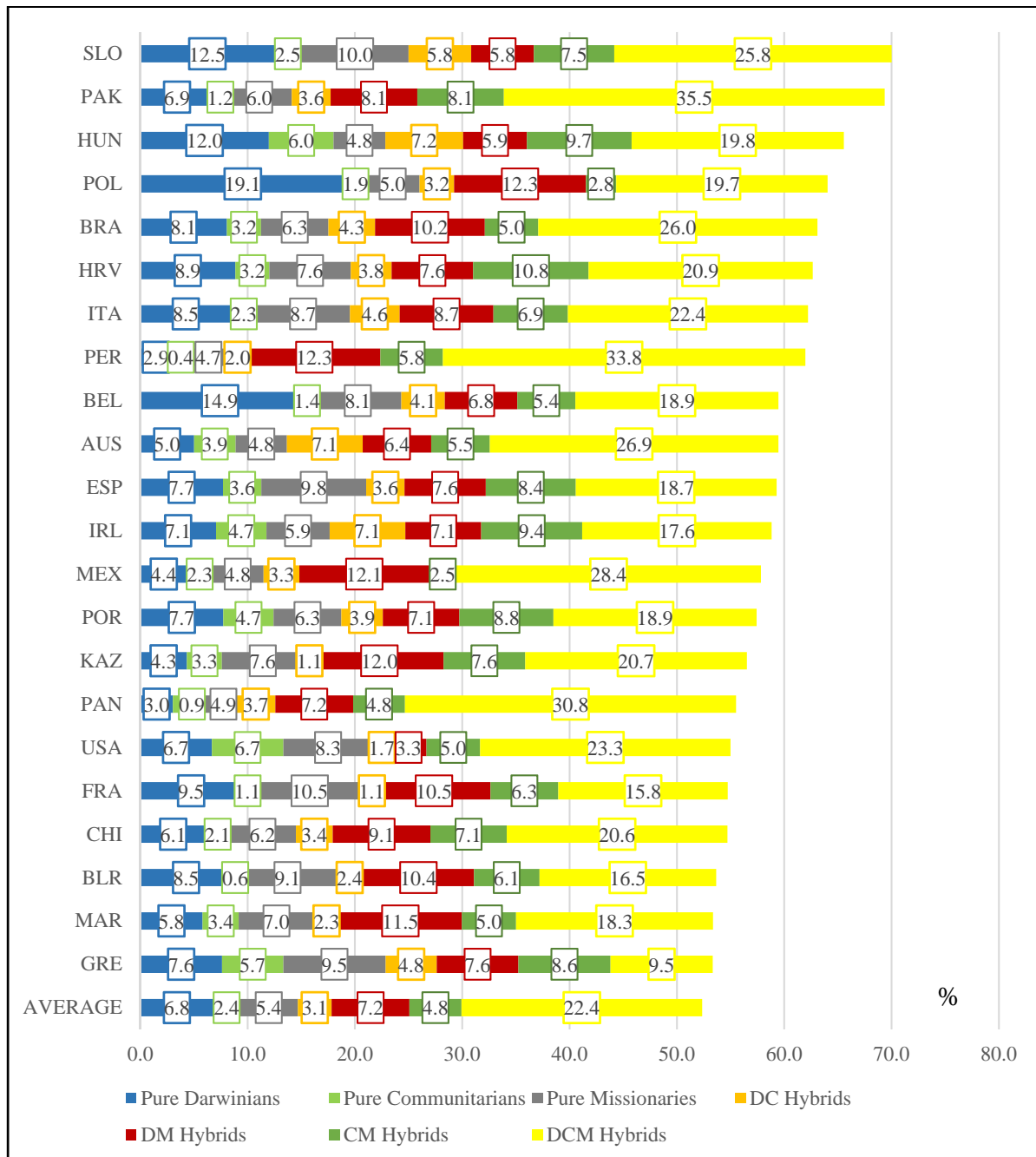


Figure 23: Founder social identities among nascent entrepreneurs (part 1)

Interestingly, most of the countries where the share of «Pure Darwinians» is higher than 10 percent are Eastern European countries (Slovenia, Hungary, Poland, and Slovakia).

A double-digit share of «Pure Communitarians» can only be found in Japan; for «Pure Missionaries», this applies to Slovenia, France, Switzerland, and South Korea.

<sup>8</sup> Excluded: Albania, India, Liechtenstein, Luxembourg, Macedonia, Norway, Sweden, and Ukraine.

Generally, the share of DCM Hybrids (meaning founders who exhibit all three identities at the same time) is relatively high. In some countries, around half of all founders where any identity can be identified exhibit a DCM Hybrid identity (e.g., Peru, Panama, and Colombia): In others, the clear majority of all founders are DCM Hybrids (e.g., Ecuador, El Salvador, Canada, China, and Malaysia). Hence, DCM Hybrids seem to be particularly prevalent in Latin American and Asian countries (with Canada as the exception).

Clearly, these insights just scratch the surface of potentially unique and novel insights. More in-depth research is necessary here.

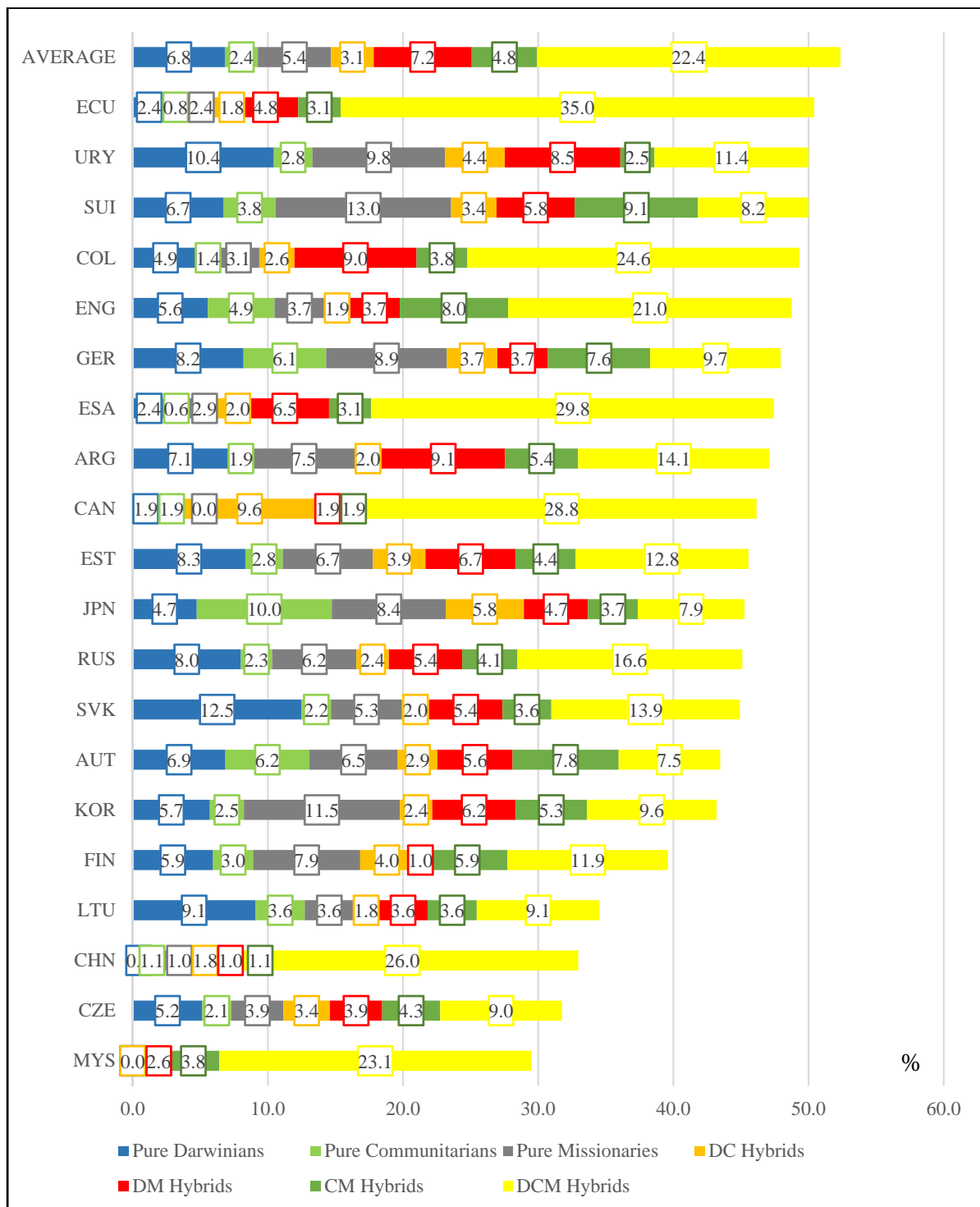


Figure 24: Founder social identities among nascent entrepreneurs (part 2)

## 5 Active Entrepreneurs

### 5.1 Prevalence

Active entrepreneurs are students who have completed firm creation and are actually running their own business. We identified them with the question “Are you already running your own business / are you already self-employed?”. 10’820 students answered with yes (8.8%).

Also here, their prevalence varies across countries, with the same “developed versus developing country” pattern as with nascent and intentional founders.<sup>9</sup>

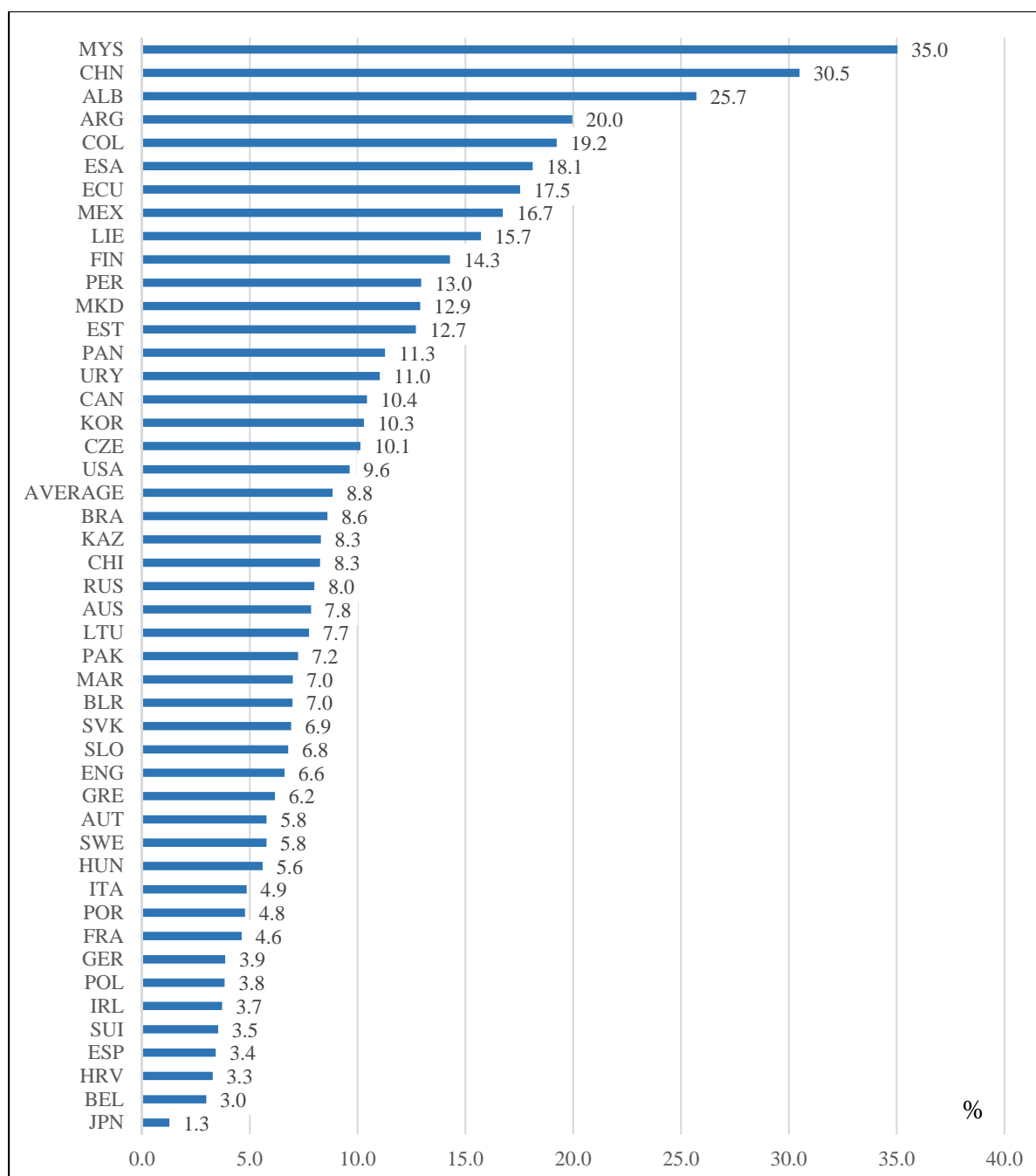


Figure 25: Share of active entrepreneurs across countries

<sup>9</sup> Due to a too low number of cases (<10), Luxembourg, Norway, India, and Ukraine were excluded.



## 5.2 The Existing Businesses

The average age of the existing ventures is around 4 years. Most of the businesses have been created in 2016 (see below). 55% of the active entrepreneurs plan that their firm will be their main occupation after graduation, which signals that these firms are not “fun” or “pet” projects in the majority of cases.

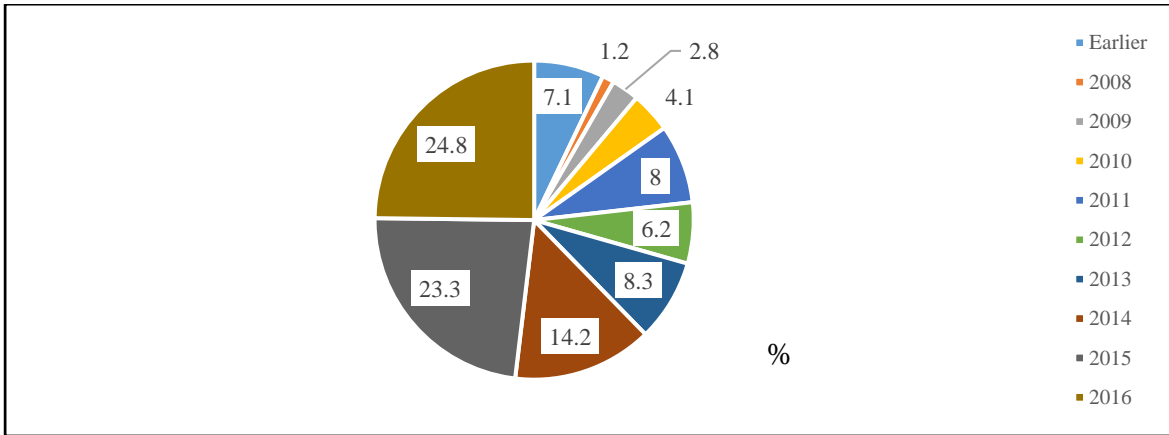


Figure 26: Year of foundation of the existing firms

While 18.6% of the nascent entrepreneurs indicated that they want to create their business without partners, 28.7% of the active entrepreneurs have actually created the firm without co-founders. Thus, some potential co-founders tend to drop out during the founding process.

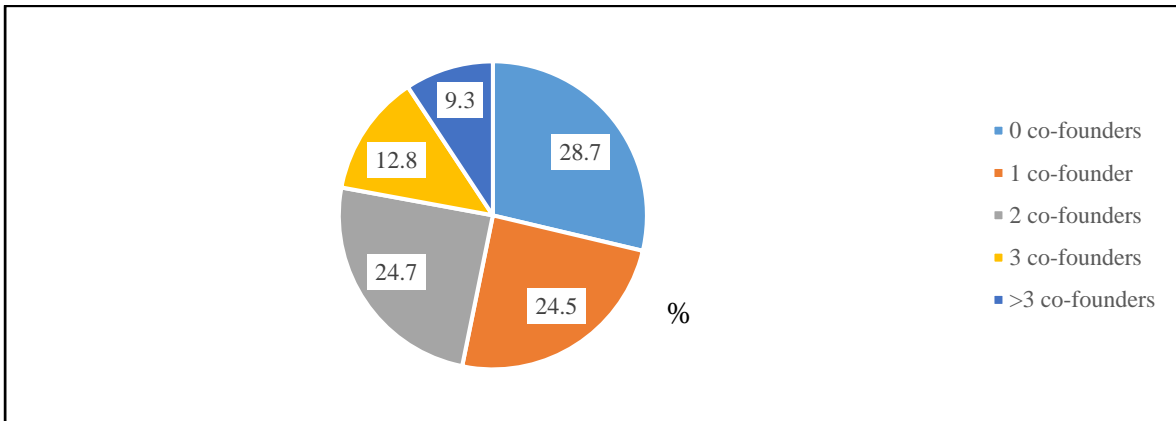


Figure 27: Number of co-founders among active entrepreneurs

On average, the firms have 6.3 employees (full-time equivalents); only 26.9% do not have any employees at all. These numbers illustrate the economic and also social impact that students’ new ventures are obviously making.

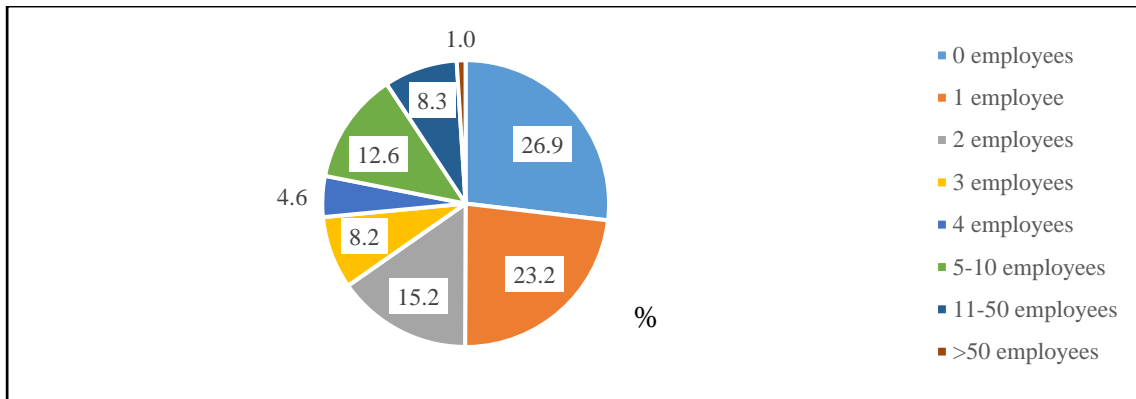


Figure 28: Number of employees of active firms

Regarding industry sector, we see a similar picture as with the nascent entrepreneurs. The industry sector distribution is quite fragmented, interestingly with the “Other” category receiving most responses.

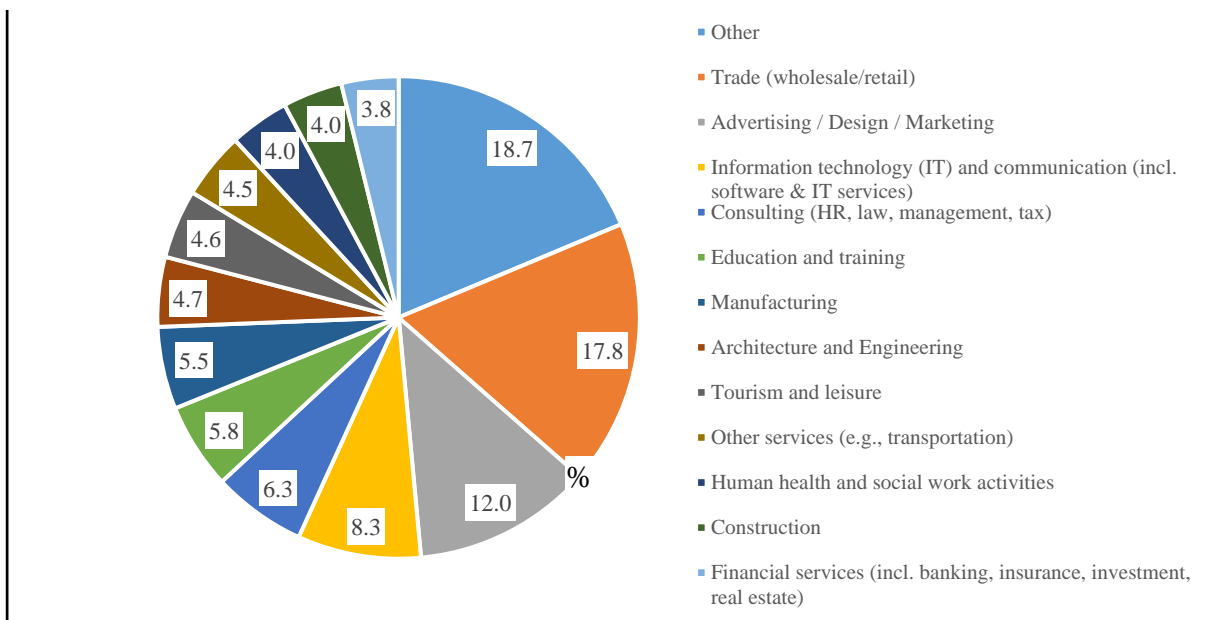


Figure 29: Industry sectors of active firms

How satisfied are the entrepreneurs with their life as an entrepreneur? They were asked to indicate their level of agreement with the following statements (1=not at all, 7=very much):

- I am satisfied with my entrepreneurial career.
- Overall, I am very satisfied with my business.
- I would be willing to start the same business again.
- All things considered, I am satisfied with my life as an entrepreneur.

The average value is 5.28, which indicates a considerable level of satisfaction. Having a closer look at the value range distribution reveals that only 22.6% of all entrepreneurs are satisfied with 4 or less (with 4 indicating medium satisfaction). Almost 20% of the

entrepreneurs exhibit the highest possible level of satisfaction. As a whole, we regard this as good news and encouragement for potential entrepreneurs.

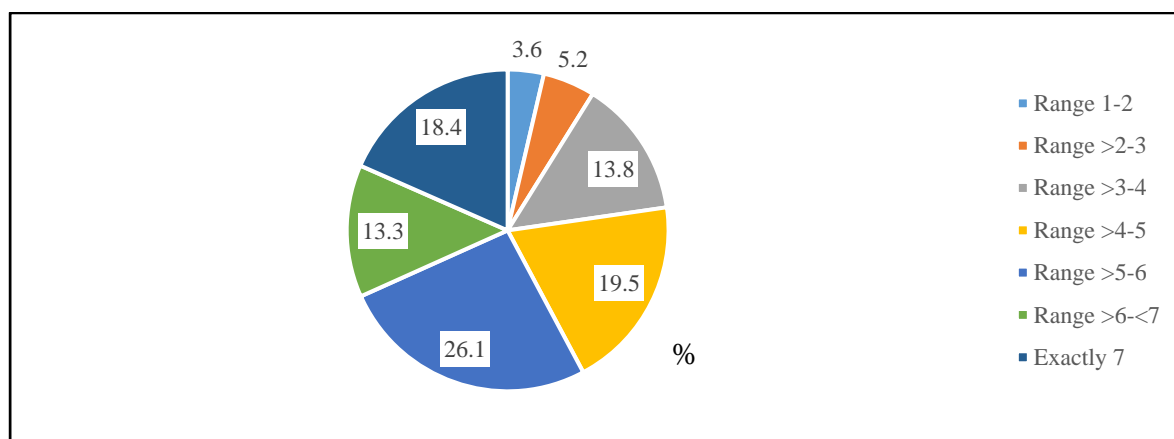


Figure 30: Satisfaction of active entrepreneurs in ranges

### 5.3 The Founder Social Identities of Active Entrepreneurs

Also for the active entrepreneurs we assessed the prevalence of the different social identities of their founders. As we have much less active entrepreneurs than nascent entrepreneurs, more countries had to be excluded due to having less than 50 valid cases.<sup>10</sup>

We see that the seven countries with the highest total share of identified identities are all Latin American countries. In most of them, the share of DCM Hybrids is relatively high.

While double-digit shares of “Pure Darwinians” can be found in many countries, double-digit “Pure Communitarians” can only be observed in Hungary and Switzerland. “Pure Missionaries” with more than 10% share can be found in several countries (e.g., Argentina, Portugal, Italy, and Uruguay). China exhibits an interesting identity profile because the vast majority of all active entrepreneurs where an identity can be identified are DCM Hybrids.

Also here, there is a pressing need for further research about the determinants and outcomes of founder social identity across countries and cultures.

<sup>10</sup> The excluded countries are Belgium, Canada, France, Greece, India, Ireland, Japan, Kazakhstan, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malaysia, Norway, Pakistan, Slovenia, Sweden, Ukraine, and the US.

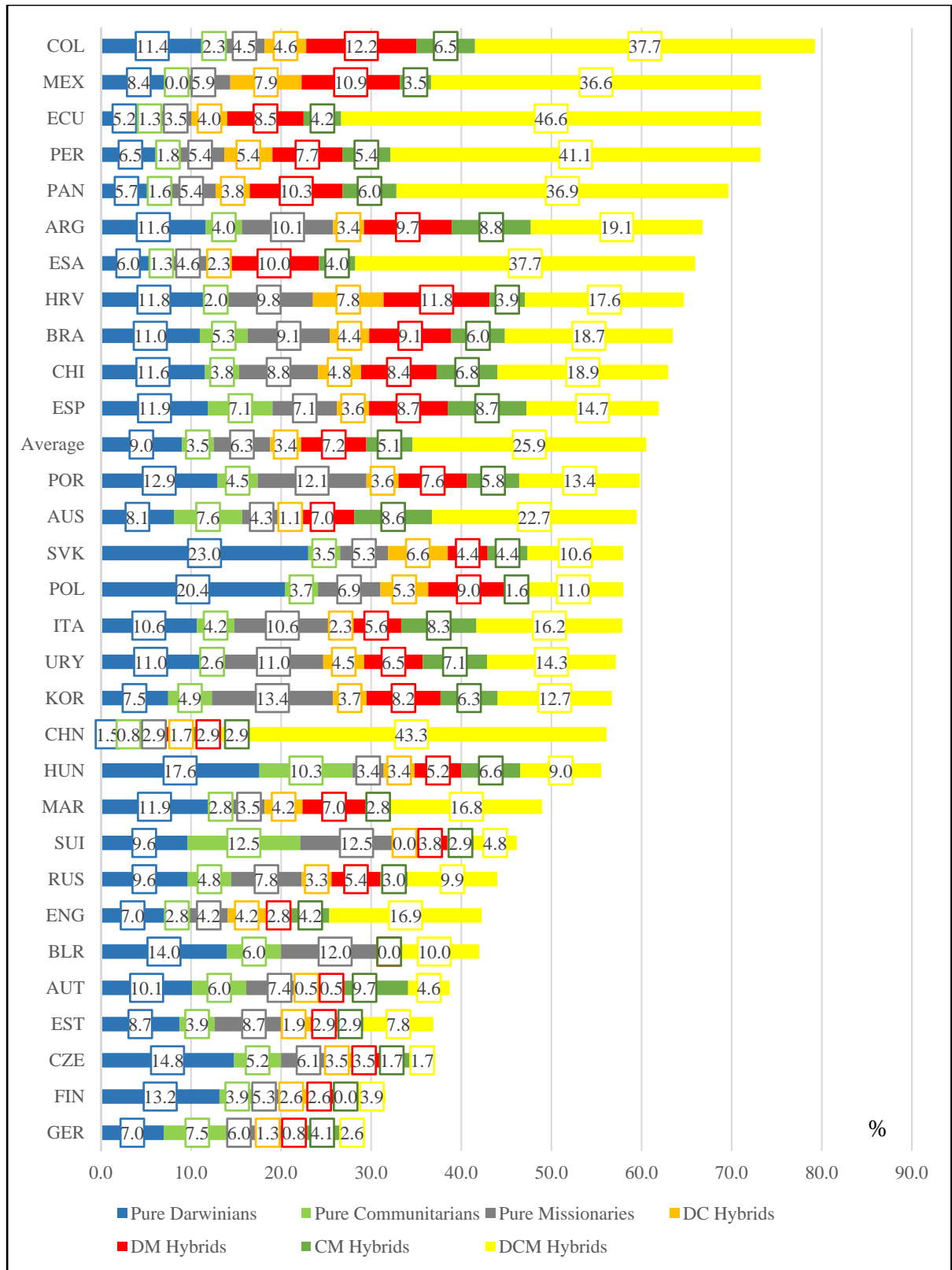


Figure 31: Shares of founder social identities among active entrepreneurs

## 6 Recommendations

Based on the above findings, we derive a few key recommendations for different stakeholders.

- **Public and private institutions** should further enhance and improve **entrepreneurship education offerings**. The overall aim should be to sensitize as many students as possible for entrepreneurship. These students should then make a conscious decision whether to become entrepreneurs or not. Entrepreneurship education has to provide them with the tools, skills, and capabilities not only to become entrepreneurs but to become successful entrepreneurs.
- Many students want to gain professional experience before creating a business. This can be a challenge as they might become “locked in” in the corporate world. Thus, **becoming an entrepreneur should be facilitated** as good as possible by **policy makers and regulatory authorities**, such as by reducing administrative and legal barriers, facilitating access to financial resources, and supporting networking opportunities in general. Otherwise the opportunity costs of leaving organizational employment will become too high.
- **Gender** is an important issue. **Policy makers** should focus even more on enabling women to start entrepreneurial careers, be it through tailored offerings like networking events, specific mentoring and counseling, or facilitating the combination of family and entrepreneurship.
- **Parents, and particularly entrepreneurial parents**, have to be aware that they are important role models. They should not paint a too rosy or too bad picture of being an entrepreneur (particularly when the business is not running well). A realistic picture is most helpful so that offspring can decide themselves whether they want to become entrepreneurs or not.
- Most of the students intend to or have already created a business with partners. **Finding the right co-founders** is a key to success. Thus, it is imperative to help with this endeavor, for instance by providing co-founder matching platforms by **universities or other institutions**.
- **Universities** in general play an essential and extremely important role. Their tasks are manifold, such as providing high-quality entrepreneurship courses, events like start-up evenings or business plan contests, and creating an entrepreneurial atmosphere. This is to sensitize students for entrepreneurship, to provide them with the necessary tools and skills, and to support them in their entrepreneurial activities also in the longer run. Universities should be aware of this role and should try to fulfill all the high expectations in these regards.
- A truly important question is **why or for what purpose** a business is actually created. **Students** should be aware of their underlying motivational drivers (e.g., in terms of their founder social identity), and think and act accordingly.
- Lastly, **students** should be aware that becoming an entrepreneur is not a “must”; but it is a very attractive and viable option that is worth considering. In addition, there are many ways of being an entrepreneur; examples are creating a business, taking over one (e.g., the parents’ one), or being a corporate entrepreneur inside an existing business.

To conclude, student entrepreneurship is an important and fascinating field that deserves further attention of scholars, practitioners, and policy makers in order to enhance and foster the creation of successful new ventures.

## 7 GUESSS: Further Information

### 7.1 The Project

GUESSS (Global University Entrepreneurial Spirit Students' Survey) has been founded at the Swiss Research Institute of Small Business and Entrepreneurship at the University of St.Gallen (KMU-HSG) in 2003. Its research focus is on students' entrepreneurial intentions and activities.

Since 2016, the GUESSS project is jointly organized by the University of St.Gallen (Switzerland, KMU-HSG/CFB-HSG) and the University of Bern (Switzerland, IMU).

The GUESSS Project Manager is Prof. Dr. Philipp Sieger (University of Bern). The supervisory board consists of Prof. Urs Fueglistaller (University of St.Gallen), Prof. Thomas Zellweger (University of St.Gallen), Prof. Norris Krueger, and Dr. Frank Halter (University of St.Gallen).

GUESSS is one of the largest entrepreneurship research projects in the world. With every data collection wave, GUESSS has grown and has become more internationally, culminating in the 7<sup>th</sup> edition in 2016 with 50 participating countries.

For every data collection wave, the GUESSS core team develops a comprehensive survey that meets the highest academic standards. The link to the online survey is then sent out to the different country teams (every participating country is represented by one responsible country team). These country teams then forward the survey invitation to their own students and to the university partners they have recruited (who then also forward it to their respective students).

GUESSS data have been used for numerous studies, reports, practitioner-oriented articles, and academic publications (e.g., in renowned journals such as JBV, ETP, SBE, and JSBM).

For more information about GUESSS, please visit <http://www.guesssurvey.org> or follow GUESSS on Research Gate (<http://www.researchgate.net>). Both on the GUESSS website and on Research Gate, we will regularly post updates, news, reports, and other publications.

If you are interested in participating in the next GUESSS edition in 2018 or if you have any general questions, please contact Prof. Dr. Philipp Sieger directly ([philipp.sieger@imu.unibe.ch](mailto:philipp.sieger@imu.unibe.ch)).

*GUESSS 2016 was generously supported by Ernst & Young (EY) as the international project partner. We cordially thank EY for their support. Without it, GUESSS in the current form would not have been possible.*



## 7.2 Country Teams of the 2016 Edition

#	Country	University	Team Leader(s)
1	Albania / Kosovo (ALB)	AAB College	Malush Tullumi
2	Argentina (ARG)	Austral University / IAE Business School	Prof. Silvia Carbonell
3	Australia (AUS)	Curtin University of Technology	Prof. Paul Weber
4	Austria (AUT)	Johannes Kepler University Linz	Prof. Norbert Kailer
5	Belgium (BEL)	Antwerp Management School	Prof. Eddy Laveren
6	Belarus (BLR)	Belarusian State University	Dr. Radzivon Marozau
7	Brazil (BRA)	UNINOVE - Universidade Nove de Julho	Prof. Edmilson Lima
8	Canada (CAN)	Concordia University	Prof. Alexandra Dawson
9	Chile (CHI)	Universidad Catolica del Norte	Prof. Gianni Chocce
10	China (CHN)	Shanghai Finance University	Su Jing
11	Colombia (COL)	Universidad EAFIT	Prof. Claudia Alvarez
12	Croatia (CRO)	University of Zadar	Gabrijela Vidic
13	Czech Republic (CZE)	Technical University of Liberec	Prof. Klara Antlova
14	Ecuador (ECU)	Universidad Catolica de Santiago de Guayaquil	Mariella Ortega
15	England (ENG)	Kingston University	Prof. Robert Blackburn
16	El Salvador	Universidad Dr. Jose Matias Delgado	Prof. Manuel Sifontes
17	Estonia (EST)	Tallinn University of Technology	Prof. Urve Venesaar
18	Finland (FIN)	Lappeenranta University of Technology	Prof. Timo Pihkala
19	France (FRA)	EM Lyon Business School	Prof. Alain Fayolle
20	Germany (GER)	University of St.Gallen (CH) FH Fulda	Dr. Heiko Bergmann Prof. Stephan Golla
21	Greece (GRE)	University of Macedonia	Prof. Katerina Sarri
22	Hungary (HUN)	University of Miskolc	Dr. Szilveszter Farkas
23	India (IND)	The Entrepreneurship School	Sanjeeva Shivesh
24	Ireland (IRL)	Dublin City University	Dr. Eric Clinton
25	Italy (ITA)	University of Bergamo	Prof. Tommaso Minola
26	Japan (JAP)	Hosei University	Prof. Noriko Taji
27	Kazakhstan (KAZ)	Turan University	Prof. Olga Sudibor
28	Korea (KOR)	Korea Entrepreneurship Foundation (KEF)	Kim Jong Sung
29	Liechtenstein (LIE)	University of Liechtenstein	Prof. Dr. Urs Baldegger
30	Lithuania (LTU)	Aleksandras Stulginskis University	Virginija Kargyte
31	Luxembourg (LUX)	Institut Universitaire International Luxembourg	Prof. Pol Wagner
32	Malaysia (MAL)	Universiti Malaysia Kelantan	Prof. Raja Suzana Kasim
33	Macedonia (MAC)	University American College Skopje	Dr. Makedonka Dimitrova
34	Mexico (MEX)	EGADE Business School	Prof. José Ernesto Amorós
35	Morocco (MAR)	Abdelmalek Essaâdi University	Prof. Hassan Ezbalehe
36	Norway (NOR)	Stord/Haugesund University College	Prof. Marina Solesvik
37	Pakistan (PAK)	Sukkur Institute of Business Administration	Dr. Altaf Hussain Samo
38	Panama (PAN)	Universidad de Panama	Omaris Vergara Dr. Maria Angeles Frende
39	Peru (PER)	Universidad Esan	Prof. Jaime Serida
40	Poland (POL)	Family Business Institute Poland	Prof. Adrianna Lewandowska
41	Portugal (POR)	Universidade de Lisboa	Prof. Miguel Amaral
42	Russia (RUS)	St.Petersburg University - GSOM	Prof. Galina Shirokova
43	Slovakia (SVK)	Comenius University Bratislava	Dr. Marian Holienka
44	Slovenia (SLO)	GEA College	Prof. Katja Kraskovic
45	Spain (ESP)	ESADE Business School	Dr. Joan Batista-Foguet Dr. Maika Valencia
46	Sweden (SWE)	University of Skövde	Prof. Susanne Durst
47	Switzerland (SUI)	University of Bern University of St.Gallen HEG Fribourg	Prof. Philipp Sieger Prof. Rico Baldegger
48	Ukraine (UKR)	Stord/Haugesund University College	Prof. Marina Solesvik
49	Uruguay (URY)	Universidad Catolica del Uruguay	Prof. Catherine Krauss
50	USA	Stetson University University of Vermont (UVM)	Prof. Isabel Botero Prof. Erik Monsen

Table 1: List of country teams

## 7.3 Sample and Participants

### 7.3.1 Countries, Universities, and Respondents

Number	Country (code)	Number of universities	Completed responses	Valid percent
1	Albania (ALB)	6	70	0.1
2	Argentina (ARG)	45	2625	2.1
3	Australia (AUS)	18	2359	1.9
4	Austria (AUT)	51	3755	3.1
5	Belarus (BLR)	16	716	0.6
6	Belgium (BEL)	6	771	0.6
7	Brazil (BRA)	83	7417	6.1
8	Canada (CAN)	2	297	0.2
9	Chile (CHI)	32	6077	5.0
10	China (CHN)	97	3274	2.7
11	Colombia (COL)	13	3832	3.1
12	Croatia (HRV)	26	1555	1.3
13	Czech Republic (CZE)	10	1135	0.9
14	Ecuador (ECU)	5	8211	6.7
15	El Salvador (ESA)	14	4653	3.8
16	England (ENG)	16	1074	0.9
17	Estonia (EST)	25	811	0.7
18	Finland (FIN)	16	532	0.4
19	France (FRA)	16	714	0.6
20	Germany (GER)	50	15984	13.0
21	Greece (GRE)	12	649	0.5
22	Hungary (HUN)	23	5182	4.2
23	India (IND)	11	37	0.0
24	Ireland (IRL)	17	807	0.7
25	Italy (ITA)	39	4446	3.6
26	Japan (JPN)	25	1490	1.2
27	Kazakhstan (KAZ)	22	253	0.2
28	Korea (KOR)	52	2603	2.1
29	Liechtenstein (LIE)	2	159	0.1
30	Lithuania (LTU)	36	426	0.3
31	Luxembourg (LUX)	5	82	0.1
32	Macedonia (MKD)	3	124	0.1
33	Malaysia (MYS)	20	137	0.1
34	Mexico (MEX)	4	1207	1.0
35	Morocco (MAR)	11	2044	1.7
36	Norway (NOR)	4	41	0.0
37	Pakistan (PAK)	12	580	0.5
38	Panama (PAN)	5	3273	2.7
39	Peru (PER)	12	1297	1.1
40	Poland (POL)	58	6388	5.2
41	Portugal (POR)	11	4685	3.8
42	Russia (RUS)	34	4152	3.4
43	Slovakia (SVK)	17	3266	2.7
44	Slovenia (SLO)	5	575	0.5
45	Spain (ESP)	19	7373	6.0
46	Sweden (SWE)	10	606	0.5
47	Switzerland (SUI)	40	2943	2.4
48	Ukraine (UKR)	4	73	0.1
49	Uruguay (URY)	7	1396	1.1
50	USA (USA)	15	353	0.3
	<b>TOTAL</b>	<b>1082</b>	<b>122509</b>	<b>100</b>

Table 2: Countries, universities, and respondents<sup>11</sup>

<sup>11</sup> It is becoming more difficult with every edition to calculate a reliable response rate because it is extremely hard to know how many students actually received a personal invitation to participate. This is because students are less and less often contacted via university email (which is also not always used regularly). Rather, the GUESSS survey is increasingly announced on Facebook pages, websites, learning portals, newsletters, blogs, and so on. Using the number of enrolled students at each university is also not appropriate as participating universities often did not contact the whole student population but only subgroups (students of specific faculties, departments, study fields, or classes). Using reliable data of a subset of the total university population in the 2016 GUESSS sample, our calculations show a response rate of 5%. This is in the same range as in previous GUESSS editions in 2011 and 2013/2014 (Sieger, Fueglistaller and Zellweger 2011; Sieger et al. 2014) and constitutes the most accurate possible estimation. Still, it is very conservative and thus likely an underestimation.



### 7.3.2 Student Demographics

The average age of the students in our sample is 24 years. The majority of students (52.4%) is between 21 and 25 years old. 58.5% are female. 79.2% are undergraduate (Bachelor) students. These numbers are very similar to those in previous GUESSS editions.

The main study fields are shown in the figure below. The distribution is again similar to the GUESSS editions in 2013/14 and 2011.<sup>12</sup>

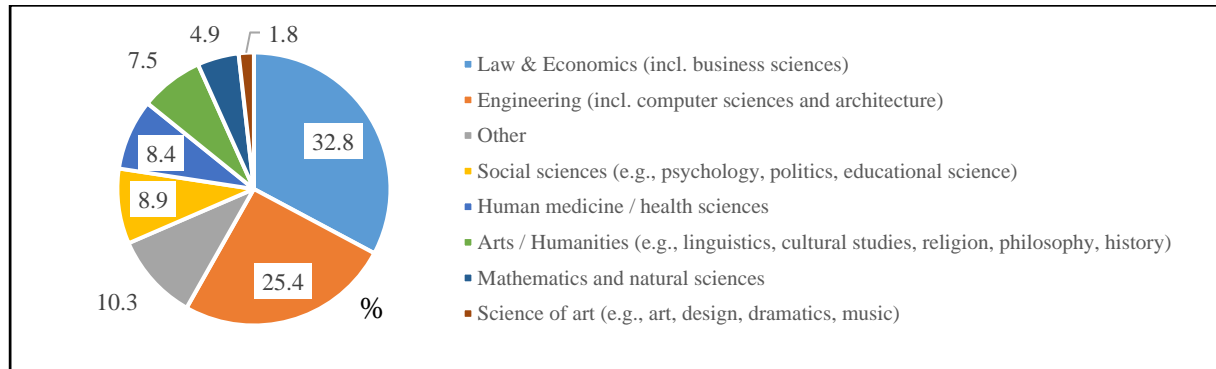


Figure 32: Main study fields of the respondents

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<sup>12</sup> The “Law & Economics (incl. business sciences)” category corresponds to the “BECL” category that has been used in previous editions.