



Global University Entrepreneurial Spirit Students' Survey 2011-2012

National Report for the Netherlands



| Colofon

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Authors

Ingrid Verheul

Rotterdam School of Management, Erasmus University Rotterdam

Katrin Burmeister-Lamp

Rotterdam School of Management, Erasmus University Rotterdam

Jörn Block

University of Trier; Erasmus School of Economics, Erasmus University Rotterdam

Hendrik Halbe

Erasmus Centre for Entrepreneurship, Erasmus University Rotterdam

Roy Thurik

Erasmus School of Economics, Erasmus University Rotterdam

Partners Guess Netherlands



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| Preface

The importance of entrepreneurship and innovation for maintaining the economic welfare of modern societies is well known (e.g. Audretsch and Thurik, 2001). Venture creation, i.e. the planning, organizing, and establishing of new organizations (Gartner, 1985), involves interactions between the environment and the individual (Shook, Priem and McGee, 2003). Hence, the individual clearly plays a pivotal role in creating new businesses and this role of the individual, especially the role of students, is the focus of this report.

During their studies, students face the challenge of deciding which career path to follow. Entrepreneurship courses and numerous recruitment events trigger students to think about their life after graduation. With regards to the career choice, one of the first – and perhaps most definitive – decisions to be made is whether to become wage- or self-employed. At first glance, this seems rather simple: “Do I want to work for a boss, or do I want to be my own boss?” The decision to become an entrepreneur, however, involves a lot more than just saying “yes” or “no”. In fact, it is a mental process that occurs over time (Gartner, Shaver, Gatewood and Katz, 1994), implying that several stages precede the final decision to become self-employed. Accordingly, Kolvereid (1996) argues that the intention to start an own business is a necessary precursor in performing entrepreneurial behaviors. Intentions which are sometimes measured as preference in the entrepreneurship literature (Grilo and Irigoyen, 2006; Verheul, Thurik, Grilo and Zwan, 2012) refer to someone’s degree of willingness and how much effort a person wants to exert in order to perform the behaviour (Ajzen, 1991). Becoming an entrepreneur, therefore, is clearly an intentional process. Since intentions are considered the single best predictor of planned behavior (Bagozzi, Baumgartner and Yi, 1989), they are invaluable to the field of entrepreneurship research. Given the contribution of entrepreneurship to innovation and economic growth, it is valuable to understand why some people engage in entrepreneurship while others do not.

How entrepreneurial intentions form, how intentions differ across students with different backgrounds and which universities’ offerings are most appreciated are central aspects of this report. Our findings are based on responses from over 13,000 students from universities and universities of applied sciences in the Netherlands who participated in the Global University Entrepreneurial Spirit Students’ Survey (GUESSS). The results provide interesting insights into the students’ entrepreneurial spirit for universities, researchers, politicians, and of course the students themselves.

Enjoy reading the report!
The Dutch GUESSS team
Rotterdam, September 2012

1 | Introduction

1.1 Background of the Study

GUESSS stands for Global University Entrepreneurial Spirit Students' Survey and is an international research project which focuses on entrepreneurial intentions and activities of students. The project, which started in 2003, was originally introduced under the name ISCE (International Survey on Collegiate Entrepreneurship) and renamed in 2008. The survey has been conducted five times since the start and each time more countries joined the project. In 2011, 26 countries participated, and the Netherlands joined for the first time.

The goals of the international survey are to:

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

The GUESSS results are relevant for different target groups:

- | All participating countries gain insight into the entrepreneurial setting and spirit of their students.
- | Universities can evaluate the quantity and quality of their offerings with regard to entrepreneurship and the success of their actions.
- | Policymakers gain awareness of the state of entrepreneurship in their country or region
- | In the long run students profit from improved university offerings.
- | The unique data set provides a basis for scientific publications; thus significant contributions to the scientific community can be made (e.g. a more detailed understanding of antecedents of career choice intentions can be gained).

1.2 Theoretical Framework

The theoretical framework of GUESSS, and thus the questions asked in the survey are based on the 'Theory of Planned Behavior' (TPB) (Ajzen, 1991). According to the TPB, intentions to pursue a certain behavior are influenced by several main factors, including attitudes towards the behavior, subjective norms (how people close to you feel about the behavior?), and perceived behavioral control (do you believe you have what it takes to perform the behavior?). In general, intentions are seen as single best predictors of behavior, which means that certain intentions precede certain behavior. In this report, the focus is on how personal characteristics, motivations, family background and education influence students' entrepreneurial intentions. The theoretical model is shown in Figure 1.

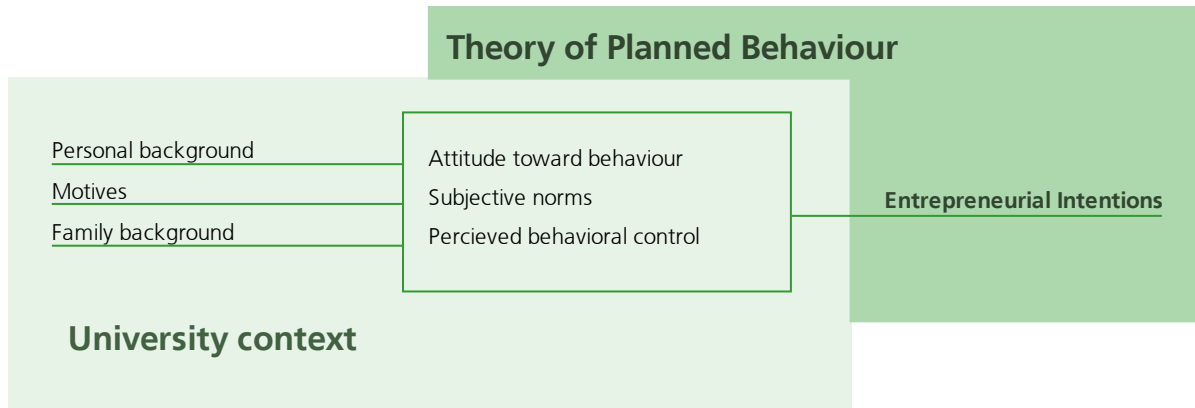


Figure 1: Theoretical model

1.3 Project Coordination

On an international level, GUESSS is coordinated by the Swiss Research Institute of Small Business and Entrepreneurship at the University of St. Gallen (KMU-HSG) in Switzerland. For each participating country, a (group of) representative(s) is responsible for coordinating the survey on a national level. In the Netherlands, the survey was conducted by a team of researchers from Erasmus University (Rotterdam School of Management and Erasmus School of Economics).

We started organizing the project by contacting professors, entrepreneurial student associations, administrative personnel and colleagues in search of partner universities. Most participating educational institutions sent the link to the online survey directly to their students. Four universities put the link to the GUESSS survey on their intranet page and one institution published the link in a newsletter for their students.

2 | The Survey in the Netherlands

2.1 Participants and Response Rates

Data were collected among students in higher education of different study fields and at different education levels (e.g., undergraduate, graduate) in the Netherlands. An online (identification-based) questionnaire was distributed by institutional representatives at 14 Universities and 24 Schools of Applied Science between March and June 2011. One month after the initial mailing the representatives of the educational institutions were requested to send out a reminder to their students. To motivate students to participate, two iPads 2.0 were raffled off to students who completed the survey. The complete GUESSS data set for 2011 includes information from more than 93,000 respondents across 26 countries, of which 13,121 are from the Netherlands.

Educational Institution	Faculties	Method	Population	Response	Response rate
<u>Universities</u>					
Eindhoven University of Technology	Selected	Direct mail	1494	132	8.84
Erasmus University Rotterdam	All	Direct mail	11086	1676	15.12
Maastricht University	All	Direct mail	14500	449	3.1
Nyenrode Business University	All	Direct mail	4045	315	7.79
Radboud University Nijmegen	Selected	Direct mail	1500	86	5.73
Tilburg University	Selected	Direct mail	1000	282	28.2
University of Amsterdam	All	Intranet	30825	76	0.25
University of Groningen	All	Direct mail	25000	1627	6.51
University of Twente	All	Direct mail	8416	731	8.69
Utrecht University	All	Direct mail	30000	3115	10.38
VU University Amsterdam	Selected	Direct mail	5000	253	5.06
<u>Universities of Applied Sciences</u>					
Amsterdam Univ. of Appl. Sciences	All	Intranet	41779	332	0.79
Breda Univ. of Appl. Sciences	All	Intranet	7000	29	0.41
The Hague Univ. of Appl. Sciences	Selected	Direct mail	200	55	27.5
The Hague Univ. of Hospitality Mgt	All	Direct mail	1900	78	4.11
HAN Univ. of Appl. Sciences	Selected	Newsletter	1400	60	4.29
Hanze Univ. of Appl. Sciences	All	Direct mail	23320	814	3.49
INHolland Univ. of Appl. Sciences	All	Direct mail	33000	996	3.02
Univ. of Appl. Sciences Utrecht	All	Direct mail	38000	1738	4.57
Zuyd Univ. of Appl. Sciences	All	Intranet	13200	30	0.23
Other ¹	247				
Total	13.121				

¹ Other educational institutes (with no systematic data collection and/or ≤ 20 responses) include the following universities: Leiden University, Delft University of Technology, Wageningen University, and the following Universities of Applied Sciences: Avans, Fontys, Rotterdam, Edith Stein, Stenden, NHL, Van Hall Larenstein, Zeeland (HZ), Design Academy Eindhoven, HAS Den Bosch, Amsterdam School of Arts, Leiden, Saxion, Avans, Iselinge.

Table 1: Participating educational institutions in the Dutch GUESSS survey

The final response rate for the Netherlands amounts to about 7.4 percent¹, which is slightly higher than the GUESSS country average of 6.3 percent (Sieger et al., 2011, p.9). This is an acceptable response rate given that only one reminder was sent out and that several institutes decided not to send a direct mail to the students, but instead distributed the link to the online questionnaire in a newsletter or via the Intranet. This reduced the response rates for these institutions². The Dutch GUESSS sample is not representative of the overall student population in the Netherlands but provides an analysis of the entrepreneurial intentions, experiences and attitudes of a large sample of students at different universities in the Netherlands. Table 1 presents the participating educational institutes in the Dutch GUESSS survey.

2.2 Sample Profile

2.2.1 Personal Information

The average age of students who participated in GUESSS Netherlands is 22.96 years. Figure 2 below shows that most students (64%) can be found in the age category of '20 to 24 years old'. Almost 25% are aged between 25 and 30 years old, and the remaining 12% are equally divided between the age categories of '19 years and younger' and '31 years and older'.

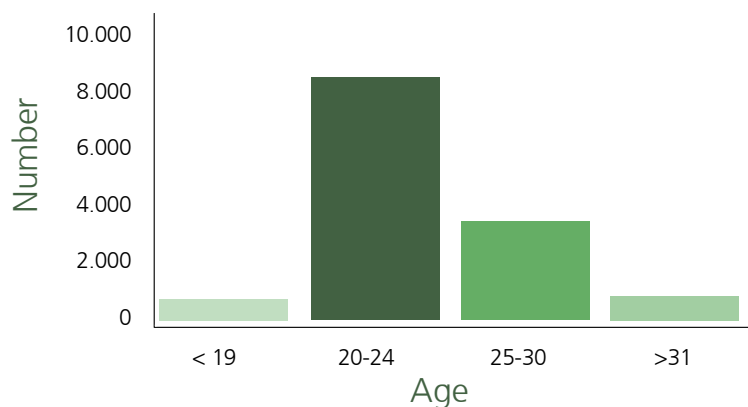


Figure 2: Age distribution in the GUESSS NL student sample

In terms of gender, more female than male students participated in GUESSS Netherlands: 56% versus 44%, respectively. Although it may be that women are more long-term oriented and more focused on their future career plans than men, and therefore, somewhat more inclined to participate, the relatively high participation rate of female students could also be related to the fact that fewer technical schools and programs were part of the survey³.

Though the majority of the students (i.e., 84.1%) have the Dutch nationality, the sample also includes about 700 German students (making up 5.4% of the GUESSS student population). In addition, the sample includes students from China (151), Bulgaria (97), Turkey (62), Romania (62), Greece (56), Poland (49), Belgium (47), Italy (43) and France (41)⁴.

Not surprisingly, most of the participating students (93%) are not married and thus still single or living together without a formal binding agreement. Still, about 800 students are married and

¹ For the calculation of this response rate educational institutions with no systematic data collection and/or those reporting less than twenty respondents have been excluded. Note that in the analysis these observations are combined, together with foreign educational institutions reported by exchange students, in a separate dummy: 'other educational institutions' (N=247).

² Four institutes posted the questionnaire on the Intranet, leading to response rates of less than one percent. One institution decided to put the link to the questionnaire in a newsletter that was sent to the students, which led to a reasonable response rate of about four percent.

³ Note that in the international GUESSS survey, the female participation rate also amounts close to 55% (Sieger et al., 2011).

⁴ The respective number of respondents is placed between brackets.

61 divorced. The number of older siblings in the sample is categorized in the following classes: 'no older siblings', '1 older brother or sister', '2' and '3 or more older siblings'. The purpose of this question was to understand the probability or need for a student to take over the family business in the (near) future, which clearly impacts one's entrepreneurial intentions. About one-third of the students have no older brothers or sisters, 36.7% has one older sibling, and almost 30% has 2 or more older siblings.

The literature indicates that having parents with an entrepreneurial background raises the probability that someone will follow in the parents' footsteps and aim for an entrepreneurial career (Scherer et al., 1989; Parker and van Praag, 2012; Block et al., in press). Both the preference to become an entrepreneur and the actual decision to be one are influenced by having entrepreneurial parents (Verheul, Thurik, Grilo and van der Zwan, 2012). In the Dutch GUESSS sample, almost 30% of the students have at least one parent who is currently self-employed or has the majority ownership in a company. Figure 3 shows that, of these students, more than half have a self-employed father, and only 1 in 6 students with an entrepreneurial parent have a self-employed mother.

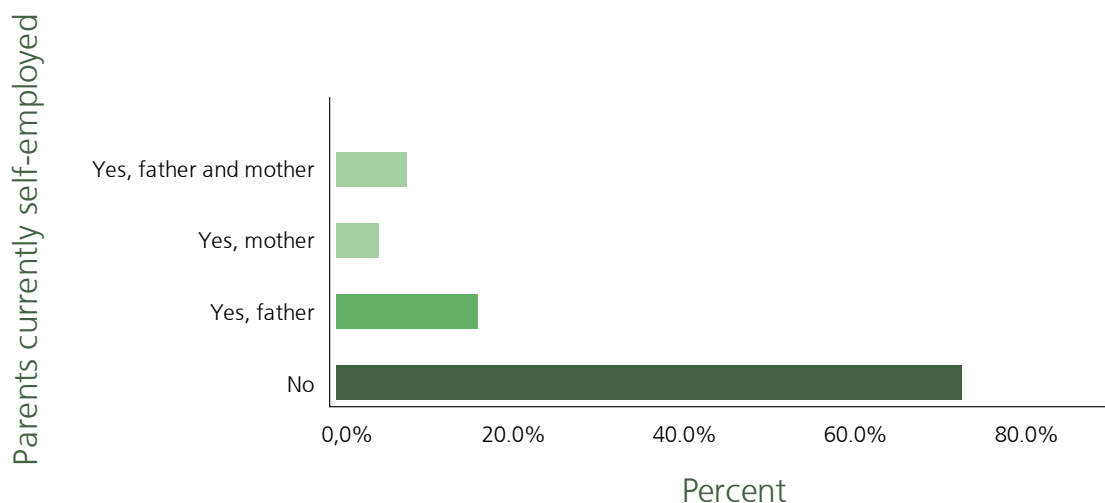


Figure 3: Self-employed parents in the GUESSS NL student sample

2.2.2 Student-Related information

Figure 4 gives an overview of the study background of students who participated in the GUESSS study. Most of the participating students are in management and business administration (17.6%), followed by medicine and health science (13.7%). A considerable number of participants (16.5%) are enrolled in a different field of study.

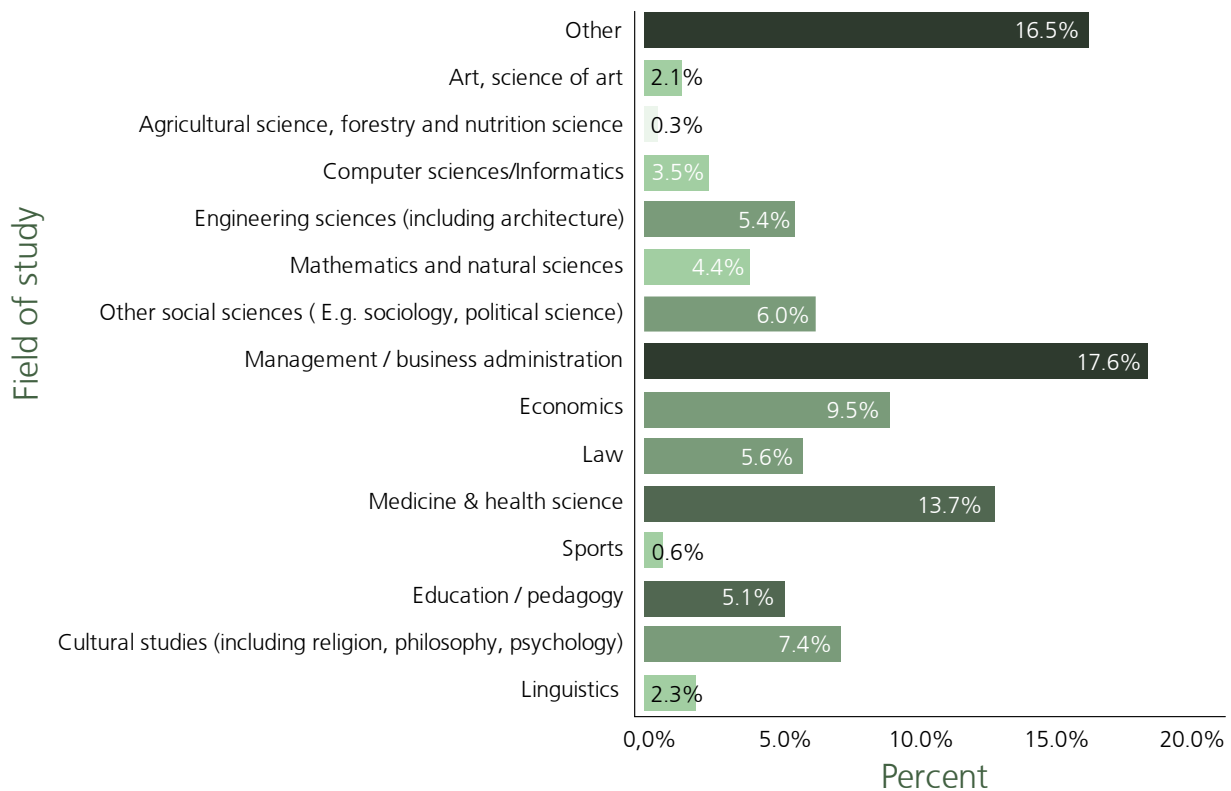


Figure 4: Study fields in the GUESS NL student sample

As shown in Table 2, participants study at different levels. Most students are undergraduates and enrolled in a bachelor program (70.3 %), followed by students studying on a master level (27.6%). A minority of participants is enrolled in a doctoral program or follows an executive program.

	Frequency	Percent	International (%)
Undergraduate (Bachelor)	9220	70.3%	78.6%
Graduate (Master)	3619	27.6%	16.7%
PhD/ Doctorate	86	0.7%	2.4%
Faculty/ Post doc	55	0.4%	0.4%
MBA Student / Executive Education	141	1.1%	1.9%
Total	13121	100%	100%

Table 2: Study level in the GUESS NL student sample

In the Netherlands, a distinction is made between two different types of tertiary education: Higher Vocational Education (referred to as Hoger Beroeps Onderwijs: HBO) and university (referred to as Wetenschappelijk Onderwijs: WO). Comparing the two, the former is considered more practical (i.e., developing the necessary skills for practicing a certain job) and the latter

more scientific (i.e., developing analytical skills). It is mandatory for Dutch children up to the age of sixteen to attend school. Since GUESSS originally has targeted universities, our sample follows: two-thirds of the students attend university, and one-third follow Higher Vocational Training.

Figure 5 below shows the distribution of students in the two different types of education across study fields. At both levels of education (i.e., Higher Vocational Education and University), the majority of students studies Management or Business Administration, followed by Health & Medicine. The high percentage of 'other' indicates that a large number of students, in particular HBO students, find it difficult to classify their study within the context of the GUESSS categorization. Within the 'other' category, there are relatively many students from the fields Accountancy & Controlling; Communication; Facility & Hospitality Management; History; Journalism; Media; Safety; and Veterinary Science.

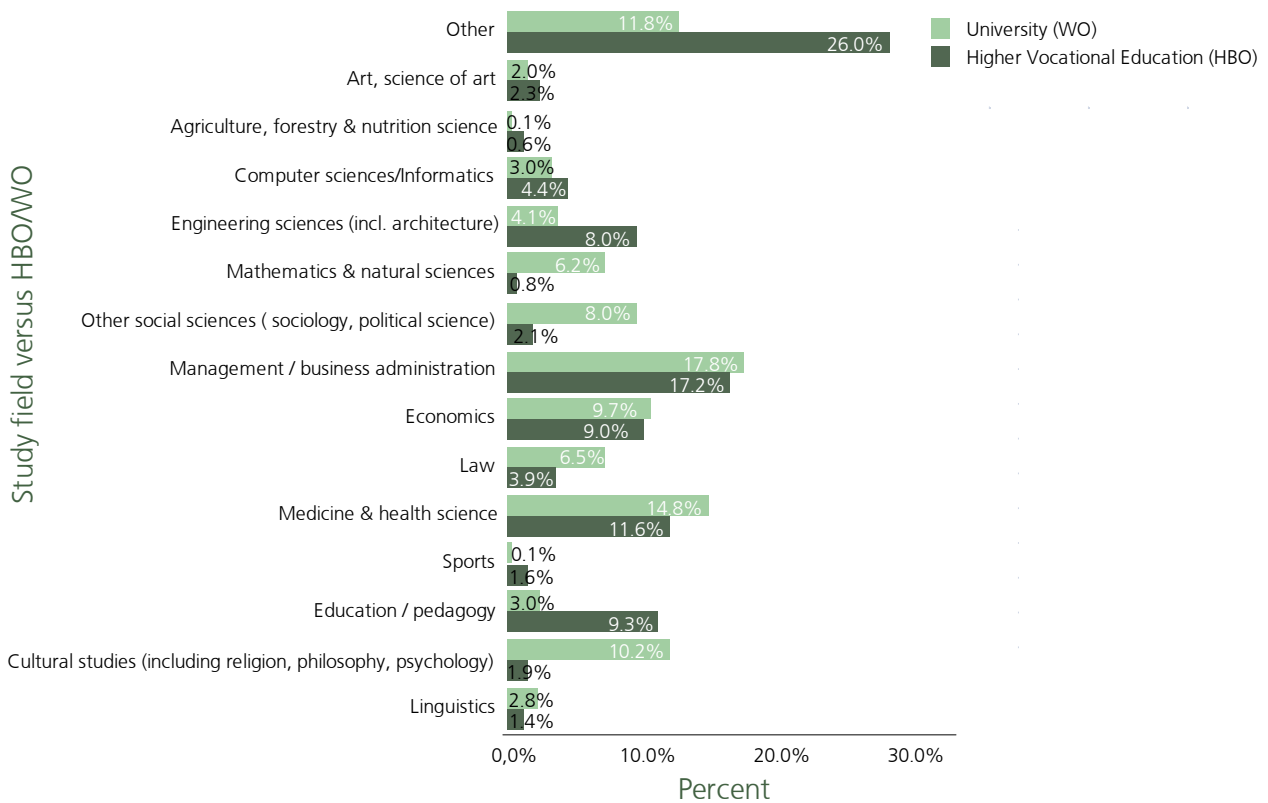


Figure 5: Study fields according to HBO/WO level in the GUESSS NL student sample

3 | Career Choice Intentions

3.1 Career Choice Intentions

Table 3 shows the stated career choice intentions both right after study and five years after study according to four broad categories (i.e., employee, founder, successor, other / no plans). In line with the literature, student participants show higher entrepreneurial intentions five years after study as compared to the time right after they finished their studies. About 70% of the students indicate to aim for a wage job right after their studies, whereas 10% intend to become self-employed, either by starting their own business (8.3%) or by taking over the family business (1.5%). About 20% of the students indicate that they do not yet want to start with their career (because of traveling, family, etc.).

The career intentions five years after study look a bit different. Five years after study 45% want to be in wage-employment, but now more than 35% want to engage in entrepreneurial activity, of which the majority intends to start a company. Note that approximately 20% still have no concrete career plans. It seems that students first want to get more experience in wage-employment before they start their entrepreneurial career. Given that experience (in industry, wage-employment, or management) is found to contribute to entrepreneurial success (Unger et al., 2011), this career path is understandable. Yet, entrepreneurial experience is likely to contribute even more to entrepreneurial success (Stuart and Abetti, 1990).

	Right after study		Five years after study	
	Frequency	Percent	Frequency	Percent
Employee	9091	69.3%	5861	44.7%
Founder	1087	8.3%	3974	30.3%
Successor	191	1.5%	814	6.2%
Other/No plans	2752	21.0%	2472	18.8%
Total	13121	100%	13121	100%

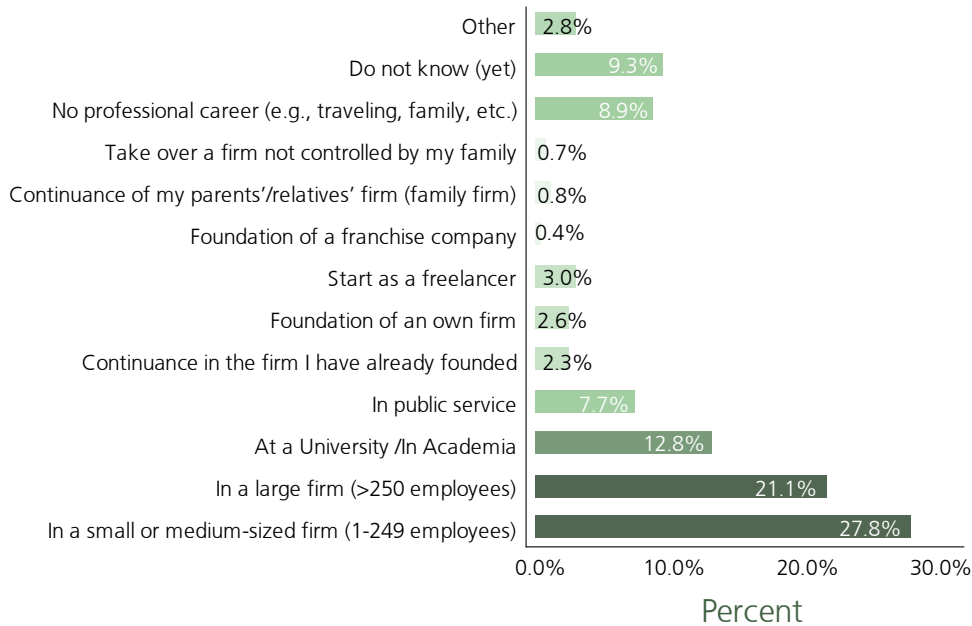
Table 3: Career type intentions right after study & five years after study (four categories)

Figure 6 and Figure 7 present a more detailed classification of the career intentions of students in higher education in the Netherlands, right after study and five years after study, respectively. Of the students who intend to become wage-employed directly after study most students (40%) opt for small- and medium-sized enterprises (SMEs), whereas a somewhat smaller percentage (30%) anticipate a career in a large firm. This distribution reverses five years after study. Here we see that, of the students who want to become wage-employed five years after study, about 28% would choose a wage job within small- and medium-sized enterprises, whereas about 38% rather opt for wage-employment in a large firm.

When comparing the responses of all students across the two time frames (right after study

and 5 years after study), we see that in particular the number of students who want to found their own company from scratch increases from 2.6% to 18.4%! Hence, it appears that, within five years after study, 1 in 5 students want to start-up their own company as compared to only 1 in 40 students directly after study. Including franchise and freelance businesses, we see that entrepreneurial career intentions are expressed by 1 in 17 students (directly after study) and 1 in 4 students (five years after study).

Career choice intentions: right after studies



Career choice intentions: 5 years after studies

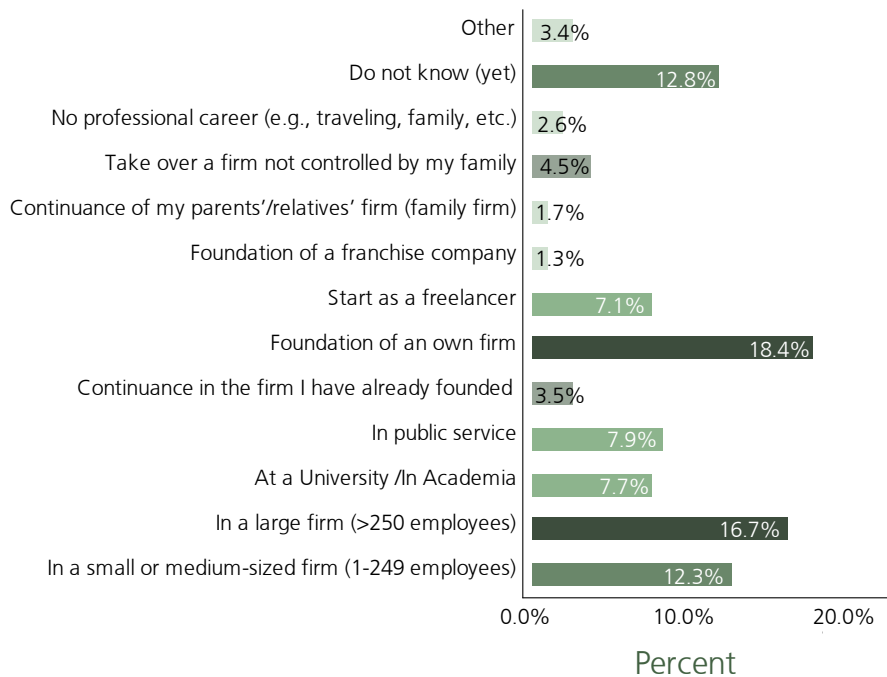


Figure 6 and 7: Career type intentions right after study and five years after study (detailed categorization)

The career intention ‘continuing the family business’ remains relatively stable across the two time frames. However, we do see more people intending to take over an existing (non-family) firm five years after study.

Not surprisingly, the number of students indicating that they do not yet know what they want to do five years after study is higher than right after their studies. Furthermore, in line with the assumption that many students travel after finishing their study, we see that the percentage of students indicating to have no professional career in mind decreases five years after study.

	Right after study		Five years after study	
	Male	Female	Male	Female
Employee: SME	25.4%	29.6%	10.7%	13.6%
Employee: Large Firm (>250 employees)	26.8%	16.6%	19.9%	14.3%
Employee: Academia	12.3%	13.1%	6.0%	9.1%
Employee: Public Sector	5.6%	9.3%	5.8%	9.5%
Entrepreneur: Continue my firm	3.0%	1.8%	5.1%	2.3%
Entrepreneur: Found my own firm	4.3%	1.2%	22.6%	15.2%
Entrepreneur: Start as freelancer	3.0%	3.0%	6.3%	7.7%
Entrepreneur: Start franchise firm	0.5%	0.4%	1.5%	1.2%
Successor: Continue family firm	0.9%	0.6%	2.0%	1.5%
Successor: Take over non-family firm	0.8%	0.6%	4.4%	4.6%
Other/ No plans	7.3%	10.2%	2.0%	3.1%
Don't know	7.9%	10.5%	10.9%	14.3%
Total	100%	100%	100%	100%

Table 4: Career intentions of male and female students

Table 4 presents the career intentions for male and female students separately. Here, we see that both directly after, and five years after study, male students are more likely to have the intention to found their own business than female students. However, for freelance activity there is no such gender difference: five years after study the intentions of female students to engage in freelance activity are even slightly higher than those of male students. Another interesting finding is that female students find it more attractive to work for an SME, and less attractive to work for a large firm than male students. Not surprisingly, working in the public sector is twice as attractive for female students as it is for male students. Hence, small and medium-sized companies as well as the public sector seem to offer attractive working conditions for female students.

Figure 8 shows differences in career type intentions for students of different study fields. Here we distinguish between ‘business & economics’, ‘natural sciences’, and ‘social sciences’. Perhaps not surprisingly, we see that business and economics students are most likely to have entrepreneurial career intentions (as a founder or successor) five years after study as compared to students from natural and social sciences: 46% versus 41% of business and economics students intend to become self-employed and wage-employed, respectively.

If we compare students in Higher Vocational Training (HBO) with University (WO) students, we see from Figure 9 that the latter have lower entrepreneurial intentions: 36.3% of the HBO students versus 27.3% of the university students have intentions to found their own business five years after study. Taking over a business (either family or non-family-controlled) is a career option for only 8% of the HBO students and 5.3% of the university students. Given that the focus of Higher Vocational Training is to develop practical knowledge and skills to practice a certain profession, this is an intuitive result.

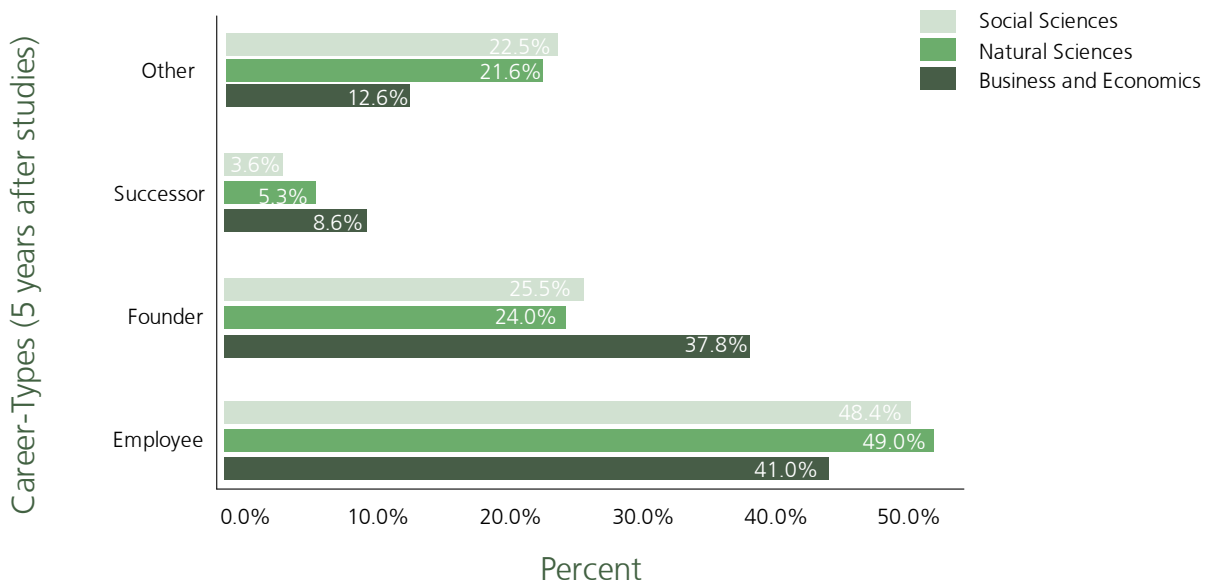


Figure 8: Career type intentions (5 years after study) across study fields

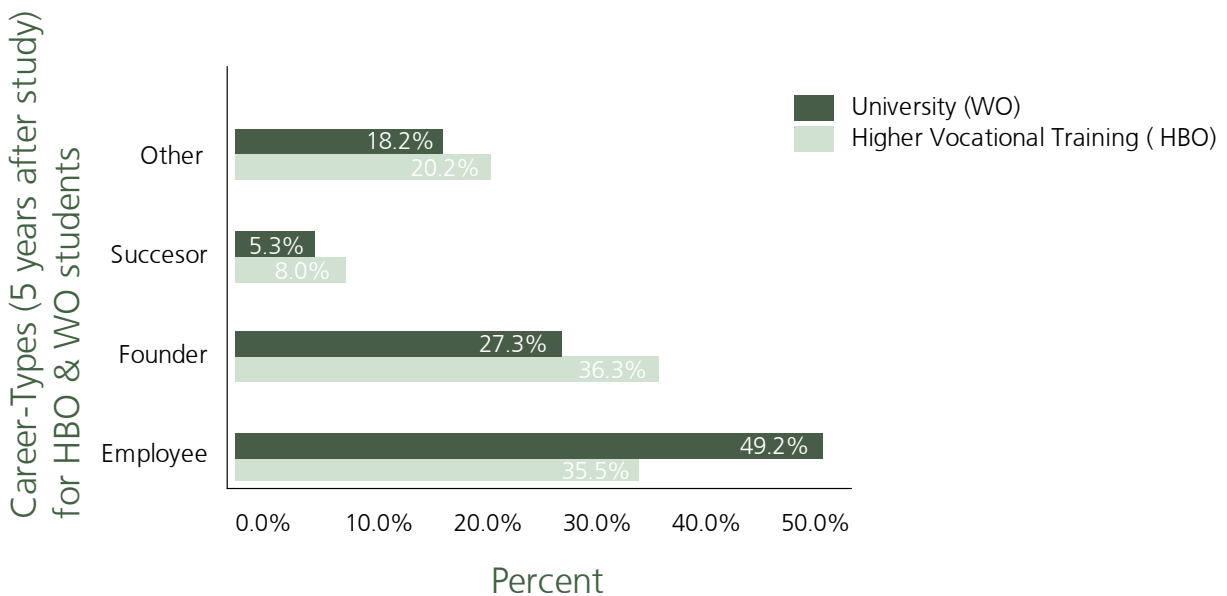


Figure 9: Career type intentions (5 years after study) for HBO and WO students

3.2 Motivation

Individuals follow different motives when choosing a career path. Figure 10 shows how these motives differ for students who want to work as an employee, start their own business or become a successor in an existing business. The motives are measured on a scale ranging from very unimportant (1) to very important (7).

For students who want to take over a business and work as a successor it is more important to continue a family tradition and to build a business that children can inherit than for those who want to start their own business or work as employees. Moreover, potential successors more often follow an example of a person they admire. As compared to students who want to be employed after their studies, potential founders and successors find it more important to exploit a specific opportunity, to become their own boss and to develop an idea for a product. With respect to financial security and wish to achieve something, students with different career intentions do not differ from each other. Interestingly, founders and successors follow more often a social and/or environmental mission than students with a career as an employee in mind.

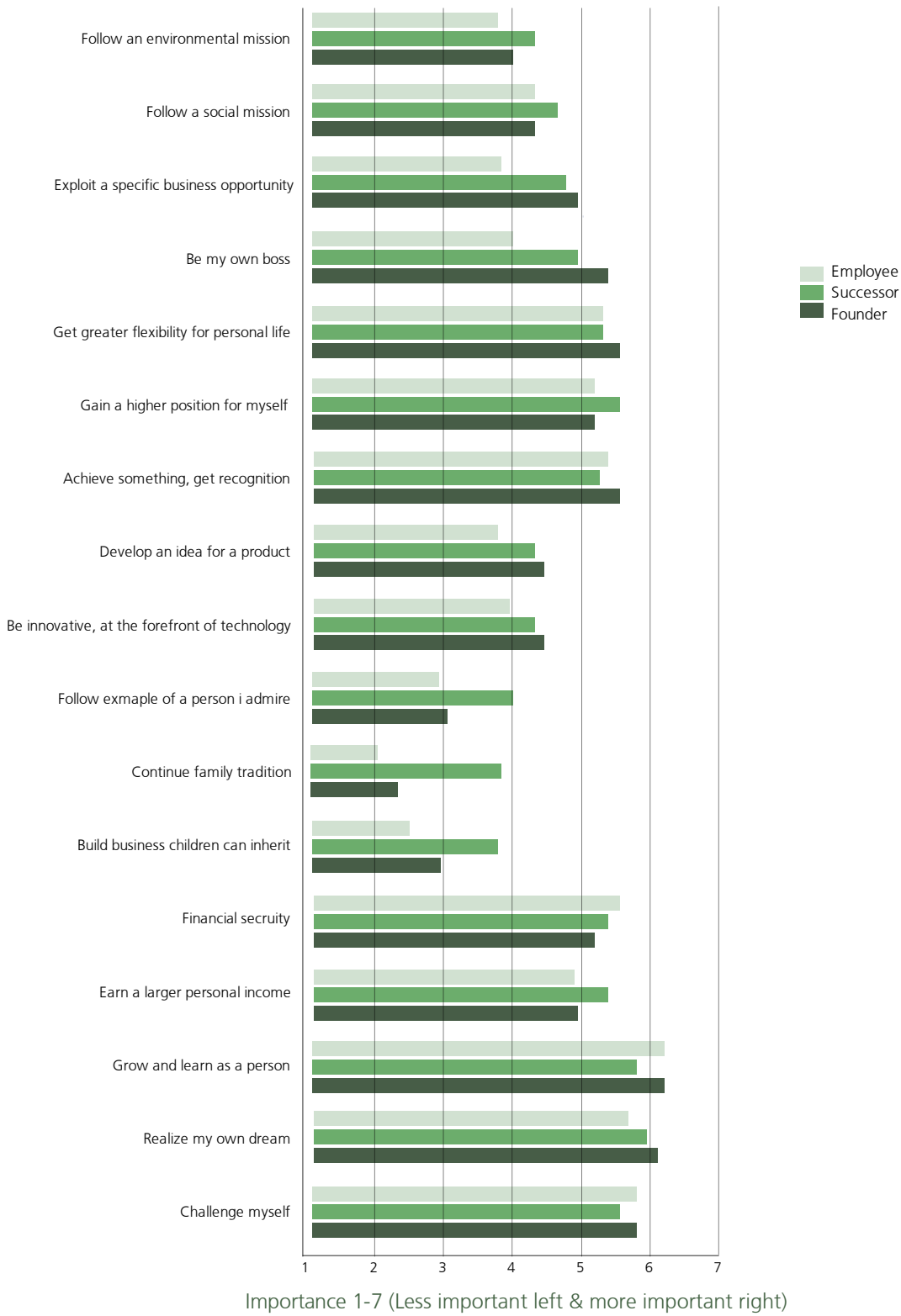


Figure 10: The importance of career motives right after studies

3.3 Family Background

Figure 11 shows that students with a self-employed parent want to start their own business (36.1%) more often than students with parents who are not self-employed (28.0%). Again, this is in line with the literature (Scherer et al., 1989; Parker and van Praag, 2012; Block et al., in press) which identified self-employed parents as a major determinant for an entrepreneurial career. The career option to take over a business as a successor occurs among those with self-employed parents (9.6%) twice as often than among others (4.8%). Taking over the business from parents as compared to taking over a business from someone else is probably the most likely option for students with self-employed parents. Figure 11 also illustrates that becoming an employee is still the most attractive career option both for students with (37.3%) and without self-employed parents (47.6%).

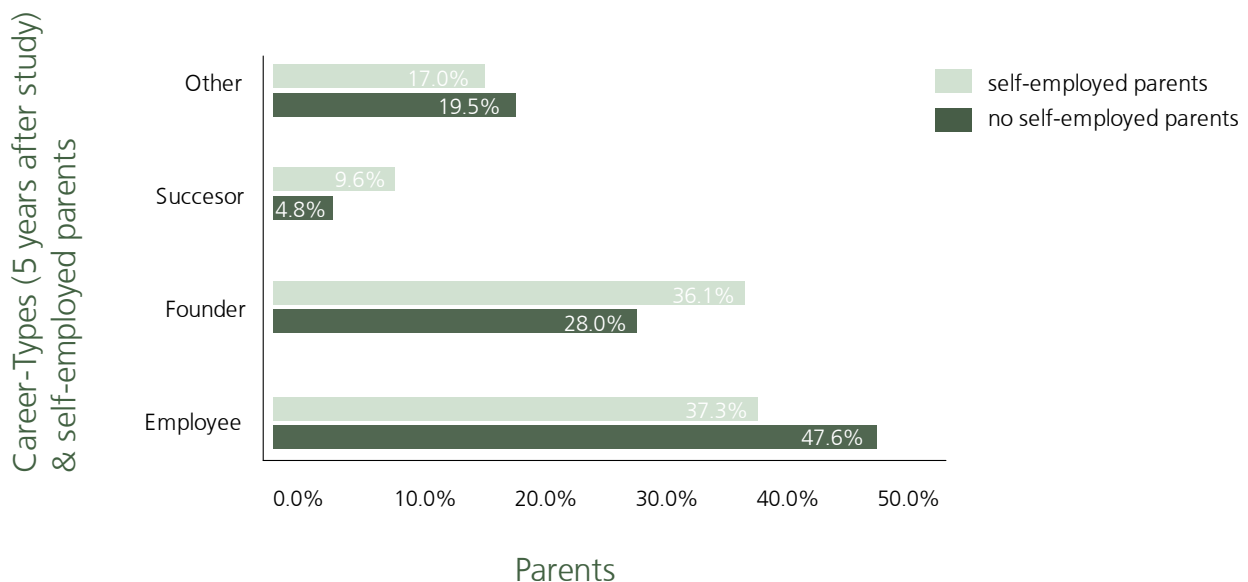


Figure 11: Career type intentions (5 years after study) and self-employed parents

Does it matter whether the father, mother or both parents are self-employed? According to Figure 12, it does. In general, if both parents are self-employed, the intention to take over a business or to start an own business increases as compared to the situation when parents are not self-employed. However, it is interesting that the intention to become a succesor is about twice as high when the father is self-employed (10.1%) than when the mother is self-employed (5.2%). For the intention to start an own firm, the influence of a self-employed mother and a self-employed father is opposite: The intention to start an own business is higher if the mother is self-employed (37.8%) than when the father is self-employed (34.7%). These findings imply that self-employed fathers increase their offspring's intentions to take over a (family) business, whereas self-employed mothers stimulate their children's intentions to start their own firm. The intention to become wage-employed is similarly low when both parents are self-employed (34.5%), or the father is self-employed (37.6%). In cases where an individual has a self-employed mother, the intention to become wage-employed is also relatively high (40.8%) indicating that

a self-employed mother may lead to opposing career intentions in their children. In other words, self-employed fathers serve more often as positive role models than self-employed mothers.

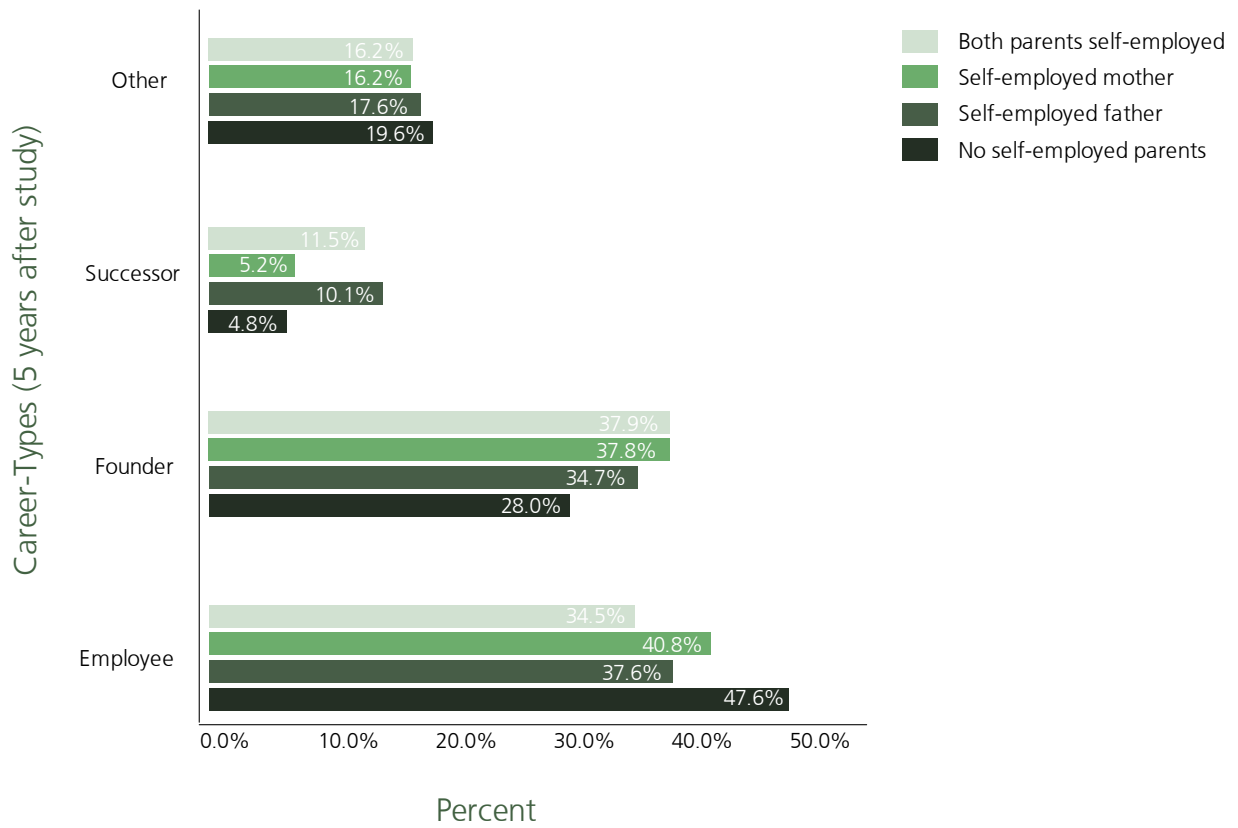


Figure 12: Career type intentions (5 years after study) and self-employed parents according to gender

3.4 University Context and Entrepreneurship Education

About 30% of students surveyed were enrolled in universities of applied sciences (in Dutch: Hogeschool or HBO). We compared the entrepreneurship intentions of university of applied science versus university students (WO students). The results from regression analyses were clear-cut. Controlling for many factors such as student age, type of study, gender, and nationality; we find that university of applied science students report on average higher levels of entrepreneurship intentions than university students. Table 5 below reports the entrepreneurship intentions grouped by the universities and universities of applied sciences that took part in the GUESSS survey. We distinguish between entrepreneurship intentions directly after study and entrepreneurship intentions 5 years after study.

Educational Institution	Responses	Response rate	Percentage of students who intent to start an own business	
			Directly after studies	5 years after studies
<u>Universities</u>				
Eindhoven University of Technology	132	8.84	14.06%	46.09%
Erasmus University Rotterdam	1676	15.12	8.16%	38.06%
Maastricht University	449	3.10	7.01%	35.06%
Nyenrode Business School	315	7.79	9.44%	39.09%
Radboud Univ. Nijmegen	86	5.73	11.63%	34.88%
Tilburg University	282	28.20	12.50%	46.69%
University of Amsterdam	76	0.25	10.52%	48.68%
University of Groningen	1627	6.51	6.41%	45.04%
University of Twente	731	8.69	7.77%	32.59%
Utrecht University	3115	10.38	6.27%	44.56%
VU University Amsterdam	253	5.06	8.43%	43.37%
All Universities			7.39%	32.51%
<u>University of Applied Sciences</u>				
Amsterdam Univ. of Appl. Sciences	332	0.79	11.78%	46.83%
Breda University. of Appl. Sciences	29	0.41	17.85%	53.57%
The Hague Univ. of Appl. Sciences	55	27.50	9.09%	43.64%
The Hague Univ. of Hospitality Mgt	78	4.11	11.54%	62.2%
HAN University of Appl. Sciences	60	4.29	26.67%	66.67%
Hanze University of Appl. Sciences	814	3.49	12.97%	40.43%
INHolland University of Appl Sciences	996	3.02	14.94%	45.75%
University of Appl. Sciences Utrecht	1738	4.57	13.46%	42.66%
All Universities of Applied Sciences			14.39%	44.30%

Table 5: Entrepreneurship intentions grouped by universities and universities of applied sciences

Entrepreneurship education is a core element of many university curricula in the Netherlands. Research on the effects of entrepreneurship education shows that university programs on entrepreneurship are an important element in forming entrepreneurship intentions. However, the direction of the effect of entrepreneurship education on entrepreneurship intention is unclear and depends on the university context and the elements of the entrepreneurship courses. Prior research (Oosterbeek et al., 2010; Von Graevenitz et al., 2010) even finds that the effect of university programs on entrepreneurship intentions can be negative, which, however, may not be a negative outcome as ill-suited and unprepared students may be discouraged to start an entrepreneurial career.

Figure 13 shows students' knowledge about entrepreneurship offerings at their university (of applied sciences). 56.3% of students know about lectures and seminars about entrepreneurship in general. Moreover, GUESSS participants are aware that their university offers technology and research resources (library, web) for founders (76.2%). Also, students know about workshops

and networking events with experienced entrepreneurs at their universities (56%). More uncertainty about the offerings at their university exists with respect to lectures and seminars about family firms (60.3%), and whether a contact point for entrepreneurial issues (58.2%) or a platform with potential investors (51.1%) exist.

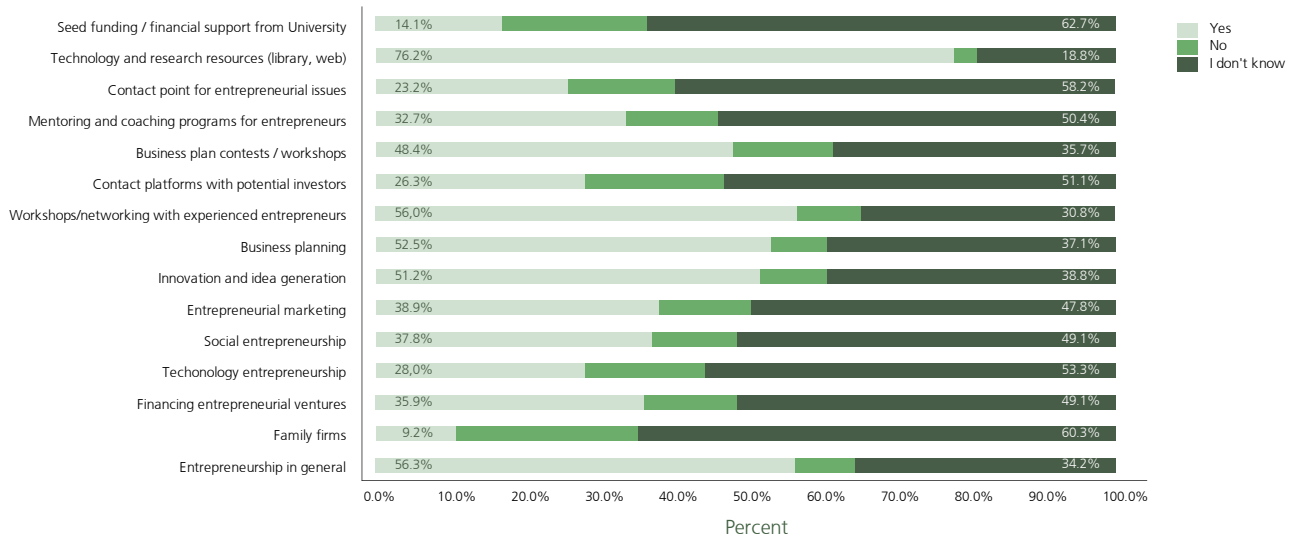


Figure 13: Students' knowledge about entrepreneurship offerings of their university (of applied sciences)

University offerings that do not exist or that students do not know about are again shown Figure 14. However, Figure 14 illustrates which offerings would be appreciated by the students and which offerings are not needed in their opinion. Universities (of applied sciences) should offer workshops/networking events with experienced entrepreneurs because such an offering is valued by 63.3% of the students. Moreover, lectures and seminars about innovation and idea generation (58.9%) as well mentoring and coaching programs for entrepreneurs (55.4%) are also held in high regard. In contrast, lectures and seminars about family firms and technology entrepreneurship are reported as not needed (79.6% vs. 72.4%).

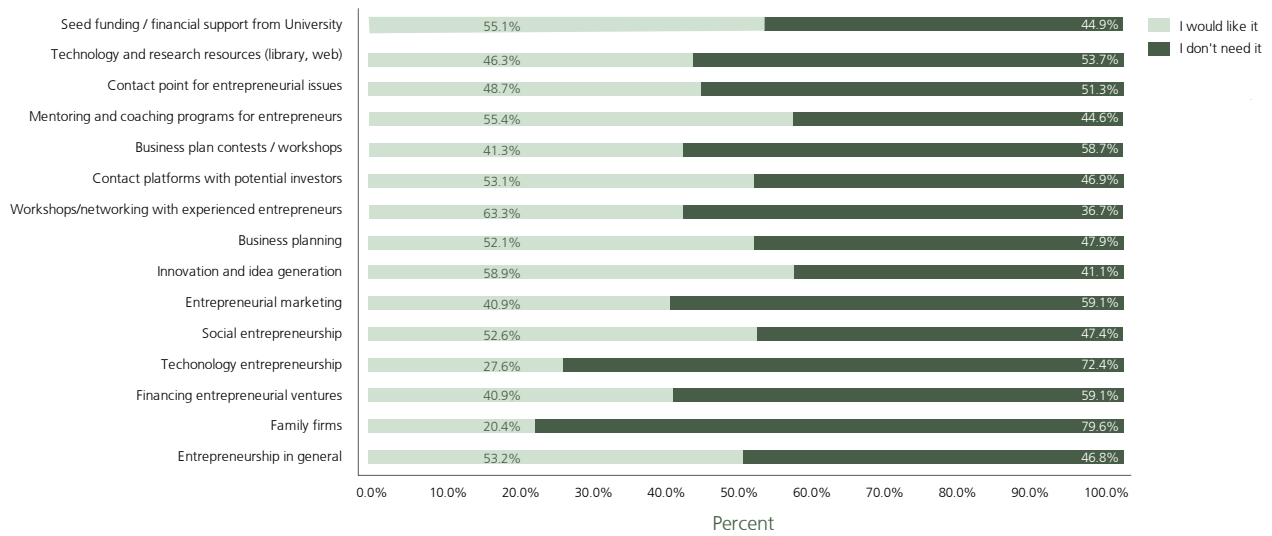


Figure 14: University offers that do not exist or are unknown but would be appreciated

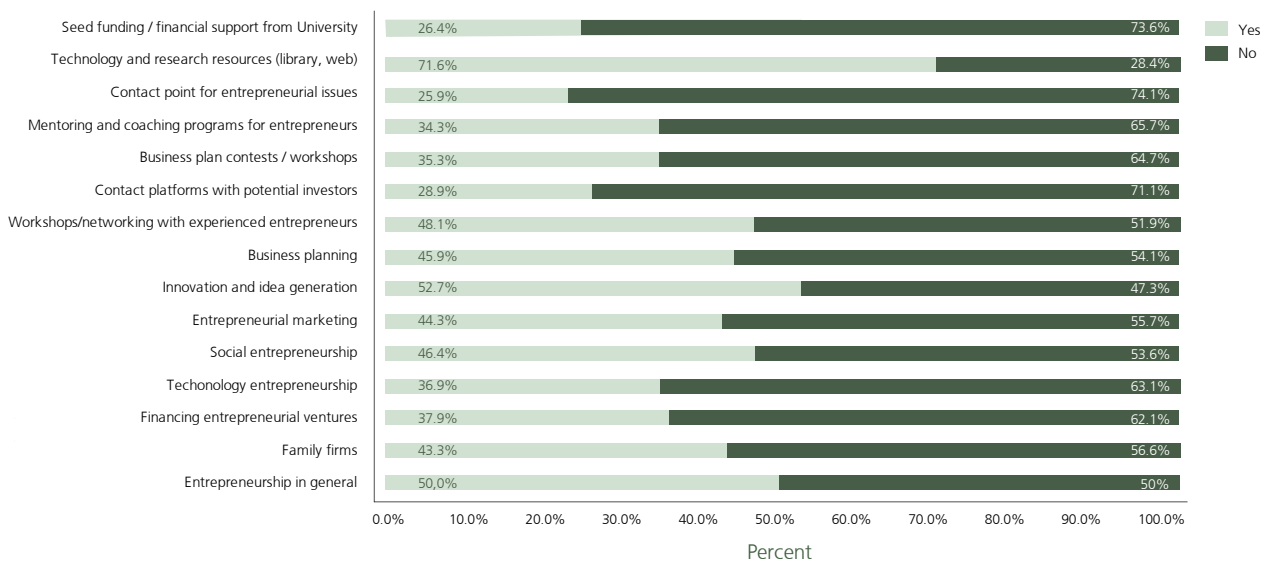


Figure 15: University offering that would be attended by students

Even more interesting is whether such offerings would be attended by students. Figure 15 shows that technology and research resources such as a library or internet would be used by 71.6% of the students. Moreover, lectures and seminars about innovation and idea generation, entrepreneurship in general as well as workshops/networking with experienced entrepreneurs would be attended by about 50% of students. In contrast, offerings such as contact platforms with potential investors or a contact point for entrepreneurial issues would be used to a lesser extent.

How satisfied were students with the university offerings which they attended? Figure 16 shows that the levels of satisfaction for all university offerings lie between 3.4 and 3.9 on a scale from 1 (not satisfied at all) to 5 (very much satisfied). Students are most satisfied with offerings such

as technology and research resources (library, web), lectures and seminars about innovation, idea generation and entrepreneurship in general as well as with workshops/networking events with experienced entrepreneurs. In contrast, if a contact platform with potential investors or seed funding/financial support is offered at the universities, students are not that satisfied with these offers (3.43 and 3.46).



Figure 16: Satisfaction with university offerings that were used/attended

Finally, Table 6 shows the percentage of students with different career intentions who attended different entrepreneurship offerings at their university. Those who want to start their own business immediately after their studies attend university offerings more often than students with the intention to become wage-employed. Business plan courses and contests, courses on entrepreneurial marketing and networking events with experienced entrepreneurs are especially popular among those with an entrepreneurial career in mind.

Offerings	Career intention right after studies	
	Employees	Founders
Entrepreneurship in general	48.6%	65.2%
Family firms	42.7%	48.1%
Financing entrepreneurial ventures	37.1%	44.5%
Technology entrepreneurship	36.8%	43.0%
Social entrepreneurship	44.9%	52.5%
Entrepreneurial marketing	42.3%	58.0%
Innovation and idea generation	51.7%	60.9%
Business planning	45.0%	58.1%
Workshops / networking with experienced entrepreneurs	46.6%	60.5%
Contact platforms with potential investors	26.9%	41.3%
Business plan contests / workshops	33.8%	47.0%
Mentoring and coaching programs for entrepreneurs	30.8%	47.5%
Contact point for entrepreneurial issues	22.4%	40.5%
Technology and research resources (library,web)	71.3%	74.6%
Seed funding/financial support from university	23.2%	35.4%

Table 6: Percentage of students with different career intentions that attended university offerings

4 | Entrepreneurial Activities

4.1 Potential Entrepreneurs and the Startup Process

Figure 17 shows how intensively students in the Dutch GUESSS sample were thinking about starting their own business. The majority of students (44%) thought sketchily about this career option. However, 21% never thought about starting their own business. Students that responded to this question with 'sketchily', 'repeatedly', 'relatively concrete', 'explicit decision' or 'time plan founding steps' are labeled as intentional founders and their behavior is further

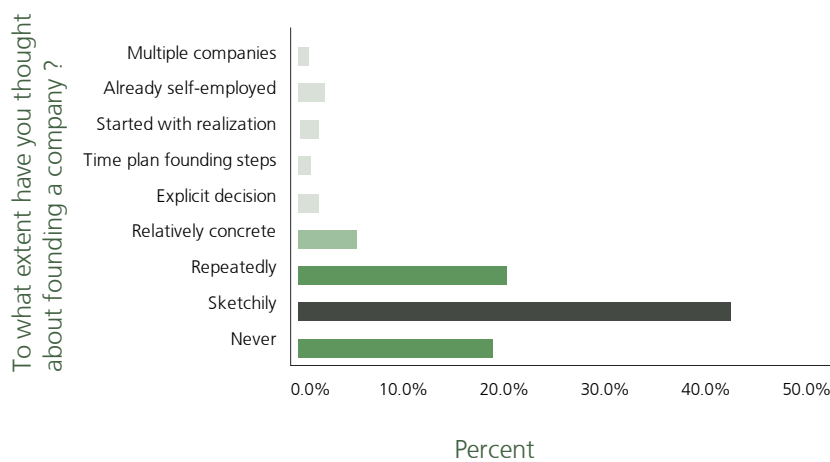


Figure 17: Steps already undertaken by intentional founders to found a company

In total, 4218 students in the sample are intentional founders, i.e., they thought more or less intensively about starting their own business. Figure 18 shows which steps those intentional founders have already undertaken. More than 65% thought of a business idea. Moreover, 34% already identified a market opportunity on which they want to base their business, and 30% of the intentional founders looked for potential partners. In contrast, only 2.5% and 4% asked a financial institution for funding or decided on the date of foundation, respectively.

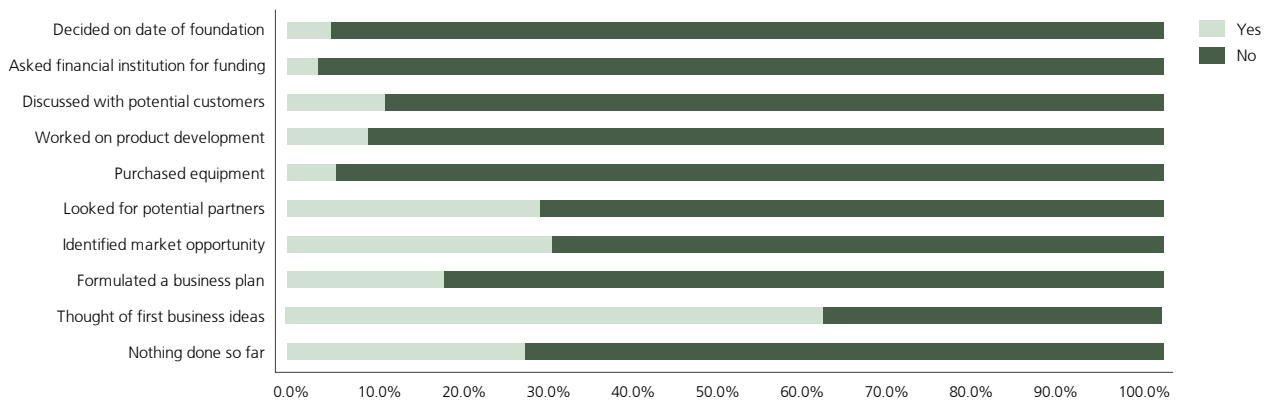


Figure 18: Steps already undertaken by intentional founders to found a company

4.2 Student Founders

In the Dutch GUESSS sample, 374 students already run their own business which equals 2.9%. This percentage is lower than the total entrepreneurial activity (TEA) of 7.2% in the Netherlands in 2010. TEA captures the percentage of the adult population (18-64 years of age) actively involved in setting up a business that they will (partly) own and manage and/or currently own and manage a business that is younger than 3.5 years old. (Hartog et al., 2011)

Interestingly, the number of student entrepreneurs differs between male and female students. Whereas 73% of all student entrepreneurs are male, only 27% of those who run their own business, in addition to studying, are female students. Most student entrepreneurs start a business in the area of communication/information technology (19.4%) or the advertising/marketing/design sector (17.2%).

Number of partners	Percentage
Alone	57.0%
1	25.9%
2	9.1%
3	4.3%
More	3.7%

Table 7: Number of partners who started a business together

Table 7 shows that the majority of student entrepreneurs started their venture alone (57%) or with one partner (25.9%). In contrast, starting a business in a larger team of three or more people is less common among the entrepreneurs in the sample. Of those entrepreneurs who started their business with at least one partner, 45% found the partner(s) at university or among friends outside university (50%). Only a minority found the business partner in the family (17%) or started the business with a spouse (9%). These findings show the importance of the university as a place to meet potential partners for starting a business.

The student entrepreneurs have on average 1.8 employees (Full Time Equivalents), but two-thirds of the entrepreneurs have no employees at all. However, many entrepreneurs plan to grow and want to have 7.6 full-time employees on average in five years. 40% of the student entrepreneurs do not want to grow or have any employees in five years.

In terms of sales, student entrepreneurs generated sales of 220,000 Euro on average in the last year. However, 31% of the student entrepreneurs generated only 1,000 Euro or less during the past year. Another 30% sold products and/or service worth between 1,000 Euro and 10,000 Euro during the last year. In terms of sales growth, student entrepreneurs in the sample plan to generate 1.2 million Euro of sales in five years. 25% of the entrepreneurs plan to generate sales of 10,000 Euro or less and another 40% want to sell products and/or services between 10,000 and 100,000 Euro.

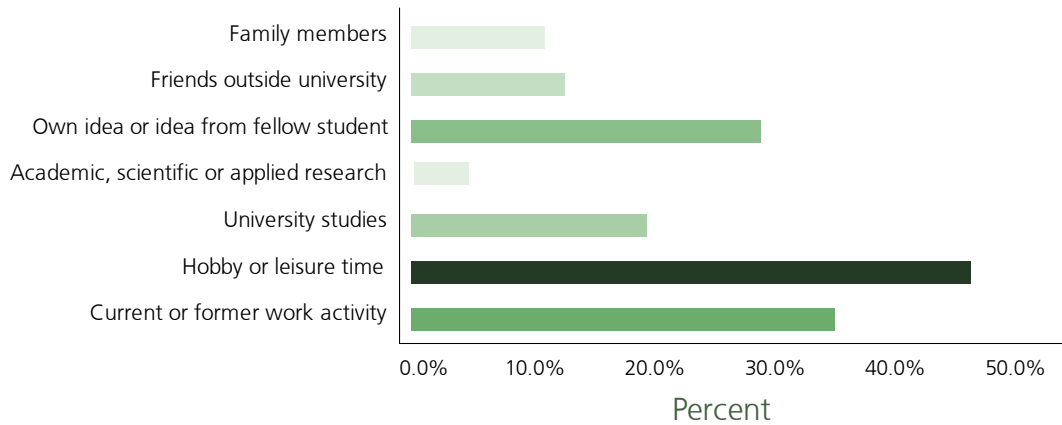


Figure 19: Sources of ideas for business in percentage (multiple answers possible)

As shown in Figure 19, most student entrepreneurs found the idea for their business in their leisure time while pursuing their hobbies (45.7%). Also, a current or former work activity is a major source of inspiration for starting an own business (38.2%). Around 21% of the student entrepreneurs found inspiration for their own business at university.

5 | Summary of Findings

Finally, we would like to summarize the main findings of the GUESSS study in the Netherlands.

- | About 70% of the students indicate to aim for a wage job right after their studies, whereas 10% intend to become self-employed, either by starting their own business (8.3%) or by taking over the family business (1.5%). However, five years after their studies 45% want to be in wage-employment, while more than 35% want to engage in an entrepreneurial activity, of which the majority intends to start a company.
- | Of the students who intend to become wage-employed directly after study most students (40%) opt for a small- and medium-sized enterprise, whereas a somewhat smaller percentage (30%) anticipates a career in a large firm. This distribution reverses five years after study. Here we see that, of the students who want to become wage-employed five years after study, about 28% choose a wage job within small- and medium-sized enterprises, whereas more than 38% opt rather for wage-employment in a large firm.
- | Both directly after, and five years after study, male students are more likely to have the intention to found their own business than female students.
- | Business and economics students are most likely to have entrepreneurial career intentions (as a founder or successor).
- | Students at universities of applied sciences (HBO) have higher intentions to found their own business as compared to university students (WO).
- | As compared to students who want to be employed after their studies, potential founders and successors find it more important to exploit a specific opportunity, to become their own boss and to develop an idea for a product.
- | Students with a self-employed parent want to start their own business (36.1%) more often than students with parents who are not self-employed (28.0%). The intention to start an own business is higher than the intention to take over the family business if the mother is self-employed (37.8%) than when the father is self-employed (34.7%).
- | More than 50% of students know about entrepreneurship lectures and seminars at their university (of applied sciences). In contrast, a majority of students does not know whether their university offers lectures and seminars about family firms, or whether a contact point for entrepreneurial issues or a platform with potential investors exist.

| Students would mostly appreciate if their university offered workshops/networking events with experienced entrepreneurs, lectures and seminars about innovation and idea generation as well mentoring and coaching programs for entrepreneurs.

| University offerings that students already used or attended can be improved because students' satisfaction lies between 3.4 and 3.9 on a 5-point scale (1- not satisfied at all; 5- very satisfied).

| The majority of intentional founders (65%) thought of a business idea. Moreover, 34% already identified a market opportunity on which they want to base their business, and 30% of the intentional founders looked for potential partners.

| In the Dutch GUESSS sample, 2.9% of students already run their own business. 73% of these student entrepreneurs are male, and only 27% of those that run their own business, in addition to studying, are female students. Most student entrepreneurs started their own venture alone or with one partner.

| Currently student entrepreneurs have on average 1.8 full-time employees. However, in five years, the number of full-time employees should increase to an average of 7.6.

| Student entrepreneurs found the idea for their business in their leisure time while pursuing their hobbies (45.7%), from a current or former work activity (38.2%) or got inspiration at university (21%).

6 | Conclusions and Implications

Participating in the GUESSS study delivered interesting and promising results on the entrepreneurial potential of students in the Netherlands. The findings offer implications for students, universities, politicians and researchers in the Netherlands.

Students with entrepreneurial intentions are a valuable asset to the Dutch economy because highly educated entrepreneurs are expected to be better able to exploit business opportunities (e.g. Davidson and Honing, 2003; Gruber et al., 2012; Shane, 2000). Therefore, students with entrepreneurial intentions should be encouraged, and entrepreneurship should be presented as a viable career choice.

Universities should examine whether their offerings for potential entrepreneurs are well known among their students, and more importantly, are sufficient in terms of scope and quality. Our findings show that students with entrepreneurial intentions use university offerings more often than students with other career intentions. Moreover, universities are a place where potential entrepreneurs can find a partner with whom they can jointly start a company.

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| References

- Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behaviour and Human Decision Processes* 50(2), 179–211.
- Audretsch, D.B. and A.R. Thurik (2001) What is new about the new economy: sources of growth in the managed and entrepreneurial economies, *Industrial and Corporate Change* 10, 267–315.
- Bagozzi, R.P., Baumgartner, J. and Yi, Y. (1989). 'An investigation into the role of intentions as mediators of the attitude-behaviour relationship.' *Journal of Economics Psychology* 10, 35–62.
- Block, J.H., Thurik, A.R, Van der Zwan, P.W. and S. Walter (in press). Business takeover or new venture? Individual and environmental determinants from a cross-country study. *Entrepreneurship Theory & Practice*.
- Davidsson, P., Honig, B. (2003). The role of social and human capital among nascent entrepreneurs. *Journal of Business Venturing* 18, 301-331.
- Gartner, W. B. (1985). A conceptual framework for describing the phenomenon of new venture creation. *Academy of Management Review* 10, 696–706.
- Gartner, W.B., Shaver, K.G., Gatewood, E.J., and Katz, J. (1994). Finding the entrepreneur in entrepreneurship. *Entrepreneurship Theory and Practice* 18(3), 5–10.
- Grilo, I. and Irigoyen, J.M. (2006). Entrepreneurship in the EU: To wish and not to be. *Small Business Economics* 26 (4), 305-318.
- Gruber, M., MacMillan, I. and Thompson, J. (2012). From minds to markets: How human capital endowments shape market opportunity identification of technology start-ups. *Journal of Management* 38(5), 1421-1449.
- Hartog, C., Hessels, J., van Stel, A. and Wennekers, S. (2011). *Global Entrepreneurship Monitor 2010 The Netherlands*.
- Oosterbeek, H., CM van Praag and A. Ysselstein (2010). The Impact of Entrepreneurship Education on Entrepreneurship Skills and Motivation. *The European Economic Review*, 54(3), 442–454.
- Parker, S.C. and M. van Praag (2012). The entrepreneur's mode of entry: business takeover or new venture start? *Journal of Business Venturing*, 27(1), 31–46.
- Kolvereid, L. (1996). Prediction of employment status choice intentions. *Entrepreneurship Theory and Practice* 21(1), 47–57.

Sarasvathy, S. D. (2001). Causation and effectuation: toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of Management Review*, 26(2), 243-263.

Shook, C.L., Priem, R.L. and McGee, J.E. (2003). Venture creation and the enterprising individual: a review and synthesis. *Journal of Management* 29(3), 379–399.

Scherer, R.F., Adams, J.S., Carley, S.S. and F.A. Wiebe (1989). Role model performance effects on development of entrepreneurial career preference. *Entrepreneurship Theory & Practice*, 13(3), 53–71.

Sieger, P., Fueglistaller, U. and Zellweger, T. (2011). Entrepreneurial intentions and activities of students across the world. International report of the GUESSS Project 2011. St.Gallen: Swiss Research Institute of Small Business and Entrepreneurship at the University of St.Gallen (KMU-HSG).

Shane, S. (2000). Prior knowledge and the discovery of entrepreneurial opportunities. *Organization Science* 11, 448-469.

Stuart, R.W. and Abetti, P.A. (1990): Impact of entrepreneurial and management experience on early performance. *Journal of Business Venturing* 5(3), 151-162.

Unger, J., Rauch, A., Frese, M. and Rosenbusch, N. (2011) Human capital and entrepreneurial success: A meta-analytical review. *Journal of Business Venturing*. 26(3), 341–358.

Verheul, I., Thurik, R., Grilo, I. and van der Zwan, P.W. (2012), Explaining preferences and actual involvement in self-employment: Gender and the entrepreneurial personality, *Journal of Economic Psychology* 33 (2), 325-341.

Von Graevenitz, G, Harhoff, D. and R. Weber (2010). The effects of entrepreneurship education. *Journal of Economic Behavior & Organization*, 76(1), 90–112.

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Contact details

Erasmus Centre for Entrepreneurship
Burgemeester Oudlaan 50 – T6-20
3062 PA, Rotterdam, Netherlands
M: info@erasmus-entrepreneurship.nl
P: +31(0)10 408 1971

