GUESSS
Global University Entrepreneurial Spirit Students' Survey

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Empowering Future Entrepreneurs: The Role of Education and Support in Austria's Evolving Entrepreneurial Landscape

Global University Entrepreneurial Spirit Students Survey 2023

National Report Austria

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1 Introduction

The Global University Entrepreneurial Spirit Students Survey (GUESSS) 2023 provides a comprehensive analysis of the entrepreneurial inclinations among students in Austrian universities, reflecting an increasing trend in entrepreneurial activities and intentions. According to the start-up statistics of the Austrian Chamber of Commerce close to 36,800 new enterprises have been founded in Austria in 2023. Students who show no interest in entrepreneurship are clearly in the minority (WKO 2023). Many students already gain practical entrepreneurial experience through internships, working in start-ups, family businesses, or by starting their own ventures while studying. Previous waves of the GUESSS survey already indicated that a significant number of students in Austria plan to start their own businesses within five years of graduation, highlighting the growing importance of self-employment as students acquire practical skills and industry knowledge.

Higher education institutions play a crucial role in promoting entrepreneurship by encouraging a positive entrepreneurial mindset among students and staff. They play a key role in developing entrepreneurial skills through specialized courses and practical field studies, and actively support potential academic start-ups.

The GUESSS survey of 2023 also highlights the growing interest in entrepreneurship, with students actively pursuing start-up ventures and engaging in business succession plans. This interest extends not only to founding their own enterprise, but also taking on the role as successors in (family) firms (see e.g. Laspita et al. 2012, Koreen et al. 2019). It emphasizes the crucial role of Entrepreneurship Education (EE) in bolstering entrepreneurial intentions and competencies, suggesting that practical experiences combined with theoretical learning are fundamental to nurturing an entrepreneurial mindset (see f.i. Gibb 2005, Kailer 2010, Volkmann & Audretsch 2017). The GUESSS 2023 findings advocate for enhanced support systems and educational frameworks, which exemplify successful models for cultivating entrepreneurial talents. Furthermore, the survey points out the importance of universities in providing practice-oriented learning, facilitating access to entrepreneurial ecosystems, and supporting students through specialized services like incubators and venture capital. It also underscores the need for continued support for alumni embarking on entrepreneurial ventures post-graduation, advocating for the integration of entrepreneurial thinking within academic curricula to prepare students for diverse career dynamics in an evolving employment landscape.

2 The Research Project GUESSS

The Global University Entrepreneurial Spirit Students' Survey (GUESSS) project is an international collaboration to grasp entrepreneurial intentions and activities among students in different countries (see www.guesssurvey.org). The present study is based on previous waves of this survey. The International Survey on Collegiate Entrepreneurship (ISCE) 2006 is the antecessor of the GUESSS surveys. GUESSS is based on cooperation between national representatives. Each representative is responsible for contacting universities and sponsors, for data collection and interpretation as well as for the analysis and report for his country. 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).

In 2023 a total of 57 countries took part in the anonymous web-based survey and the total final response included 227.712 questionnaires. This means a lower participation rate after the 2021 wave reached 267.000 students, but still higher than the 2018 wave with 209.000 participants (Sieger et al. 2021). The national study for Austria is organized by the Department for Corporate Leadership and Entrepreneurship of the University of Graz.

2.1 Respondents

A critical success factor of a web-based questionnaire is the general accessibility of students via email as well as the willingness of the universities to inform as many students as possible of the survey. The rectors, the vice rectors of academic affairs of universities and the managing directors and program directors of the universities of applied science have been contacted by email and/or by telephone and have been asked to encourage the students via newsletter mailing to complete the questionnaire. In most cases an e-mail with a short introduction of the project and a link to the online survey was sent to students. Nevertheless, in most cases no information is available how many of their students actually have been informed and whether the information was given directly via mail or through other channels of information. Therefore, no exact response rates can be calculated.

As in the previous waves of the survey marked differences in the sample size of participating countries as well as in the return rates of the participating universities can be observed. A selective distribution of questionnaires, f.i. with focus on universities with entrepreneurship chairs and entrepreneurship education courses and extra-curricular measures will probably distort the results. This has to be kept in mind when trying to make any comparisons between countries, between universities, or between results of different waves of this survey.

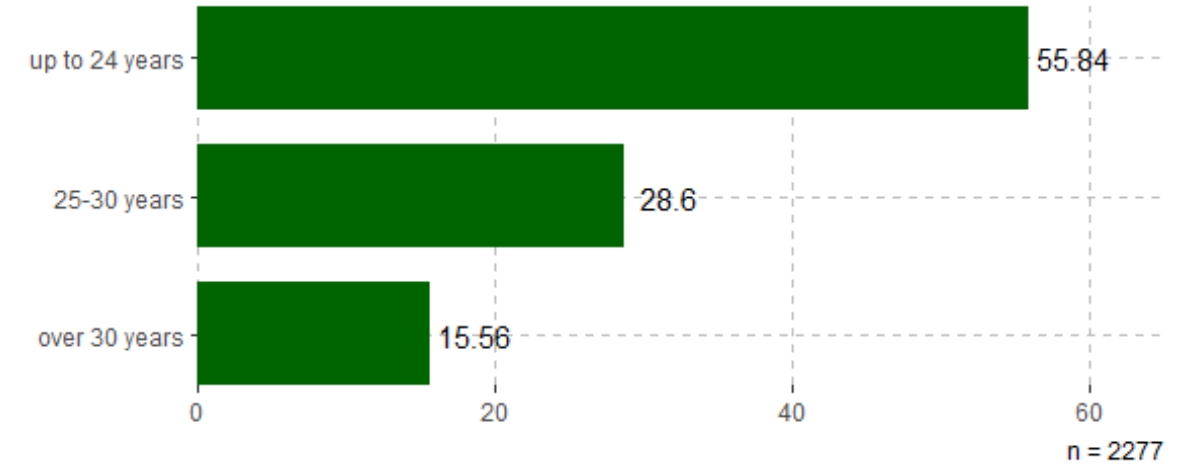
The Global University Entrepreneurial Spirit Students' Survey (GUESSS 2023) includes 57 countries worldwide. In total 226.718 students participated in this online-survey focusing on entrepreneurial intention and start-up activities.

In Austria, 2.277 students from 40 Austrian universities and universities of applied science filled in the complete online-questionnaire. 27 out of these 40 informed their students actively about this survey. Only fully completed questionnaires have been taken into account.

2.1.1 Age

The average age of students participating in GUESSS Austria 2023 is 25.6 years. The age profile (Figure 1) shows, that more than half (56%) of the Austrian respondents can be found in the age category “up to 24 years”. 29% are between 25 and 30 years old, and the remaining respondents (15%) are older than 30 years. This makes the participants of this wave of GUESSS Austria a little bit older than the last one (mean in 2021: 24.7 years).

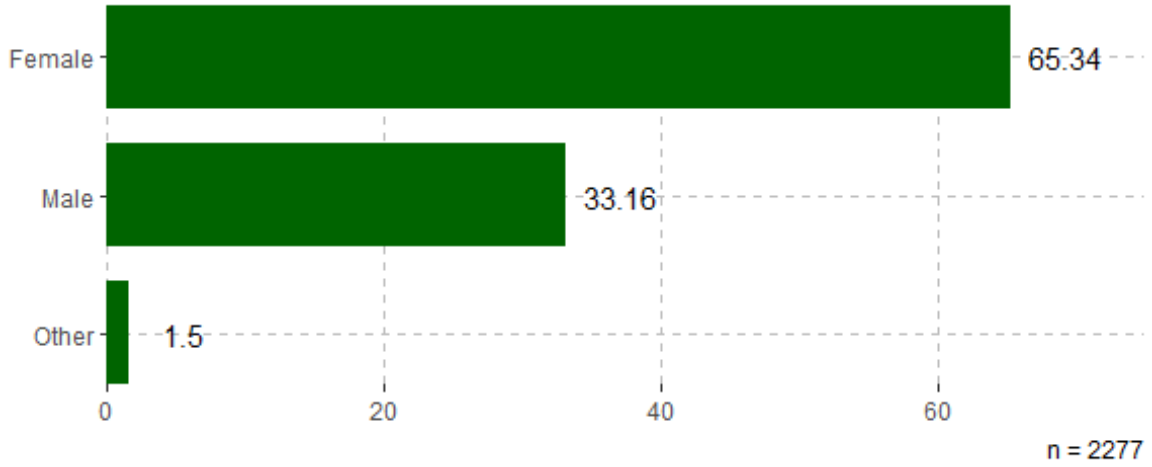
Figure 1: Age profile of the sample



2.1.2 Gender

Like in previous surveys, more female (65%) than male (33%) students participated in the survey. In this year's sample, 1.5% of participants describe themselves as gender-diverse. In the sub-sample of students which already have participated in Entrepreneurship Education, 62% of respondents are female, 38% male and 0.01% gender-diverse. The higher percentage of women has to be taken into account in country comparisons as the female entrepreneurial intention, generally speaking, is lower.

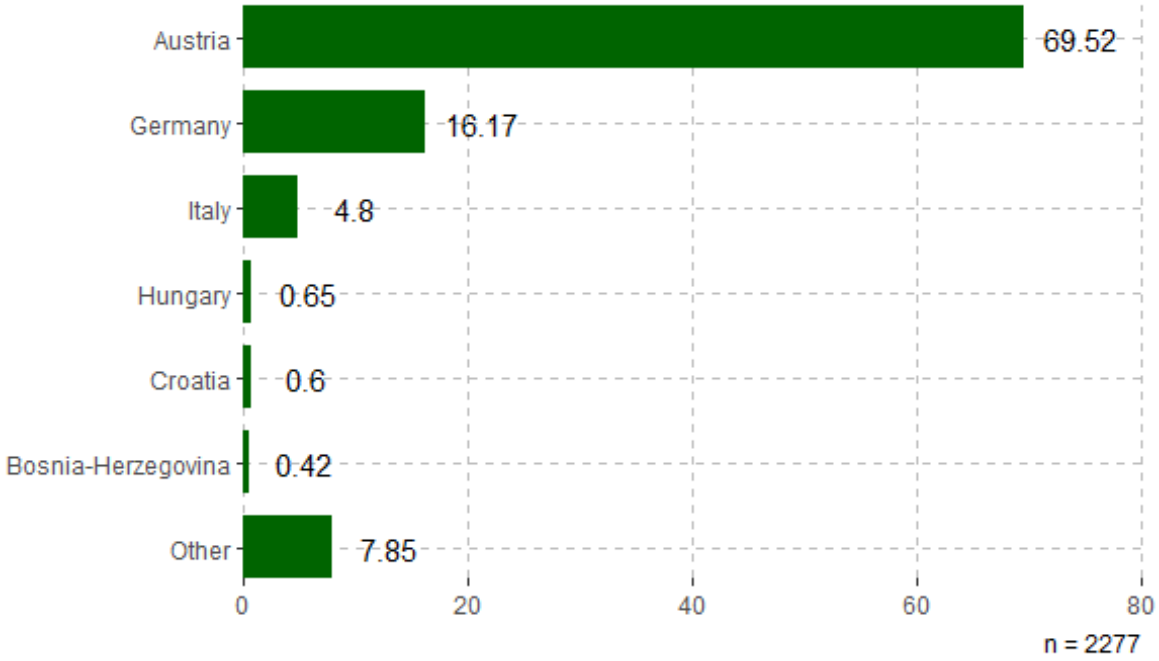
Figure 2: Gender profile of the sample



2.1.3 Nationality

The vast majority of the respondents (70%) were Austrian citizens, followed by Germans (16%) and Italians (4.5%).

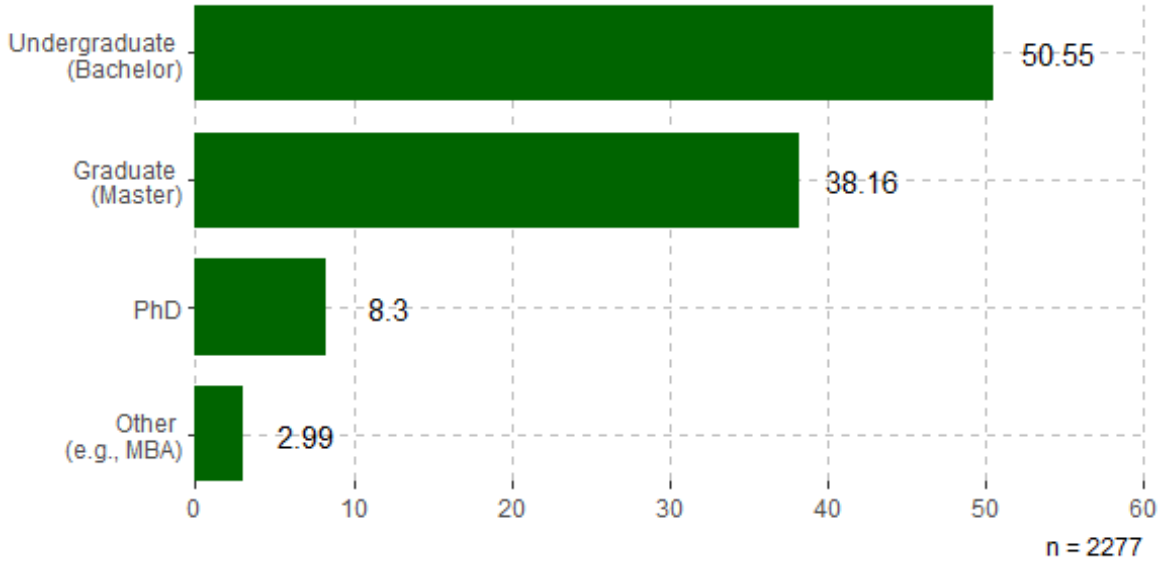
Figure 3: Nationality profile of the sample



2.1.4 Level of studies

As illustrated in figure 4 the participants in GUESSS Austria 2023 study at different levels. More than half of the students are enrolled in a bachelor program (59%), followed by students studying at the master level (33%). Fewer respondents are enrolled in a PhD (8%) or MBA (3%) program. The large number of students studying at the graduate or postgraduate level should be seen in the ongoing conversion from diploma programs to the Bologna system with bachelor and master programs in Austria.

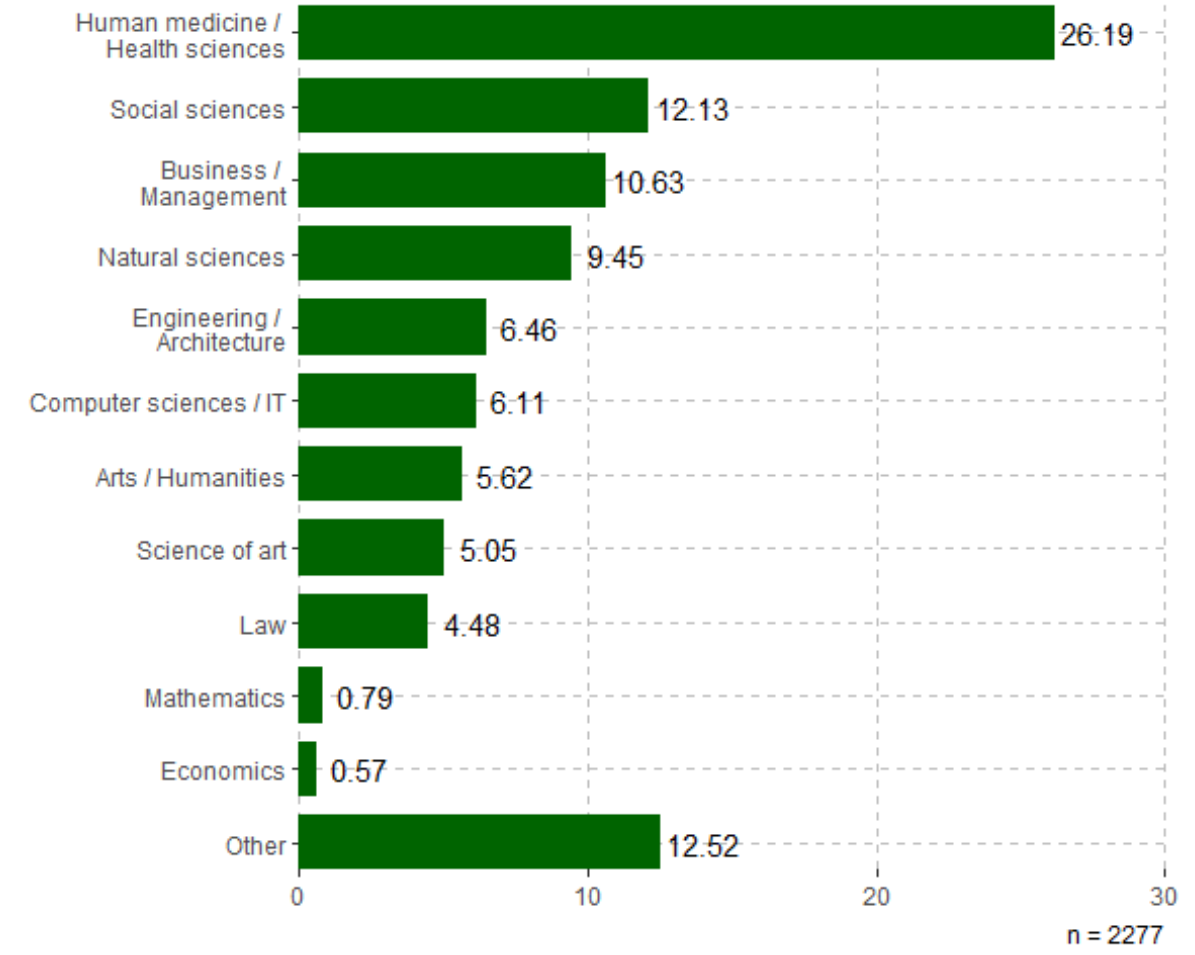
Figure 4: Level of studies



2.1.5 Fields of study

Figure 5 illustrates the distribution of the aggregated fields of study. Just above a quarter (26%) of this year's sample is studying in Human medicine/health science related fields, followed by Social sciences (12%), Business/Management sciences (11%) and natural sciences (9%), Law (7%), and Arts & Humanities (4%). More than 12% of participants chose the 'Other' category.

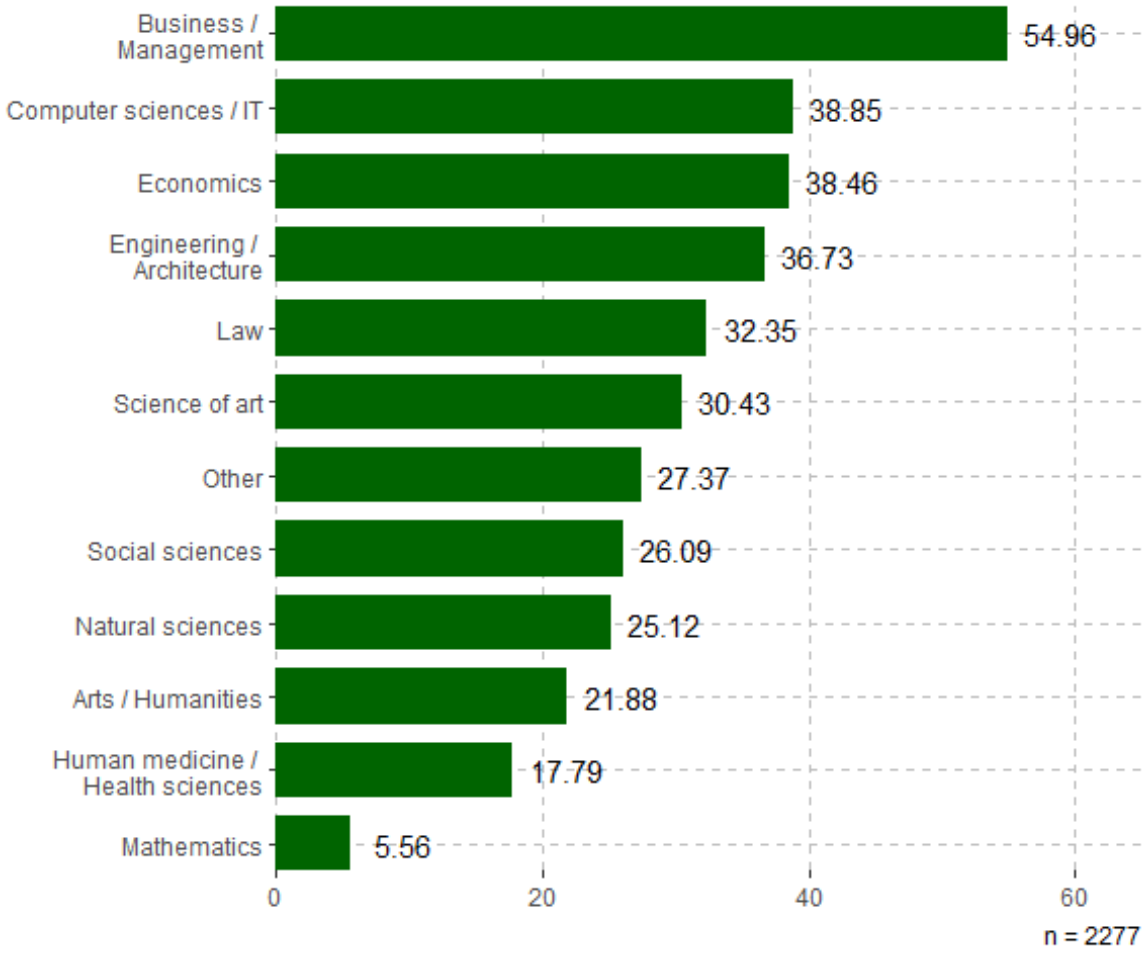
Figure 5: Fields of study



2.1.6 Participation in Entrepreneurship Education by fields of study

Figure 6 illustrates the proportion of students participating in Entrepreneurship Education by their respective fields of study. Here the distribution of fields stands in clear contrast to the overall sample of this year's GUESSS study. This is partly due to the fact that entrepreneurship chairs are not present on all universities or fields of study. Therefore, the universities offerings for Entrepreneurship Education vary strongly from university to university.

Figure 6: Participation in Entrepreneurship Education by field of studies

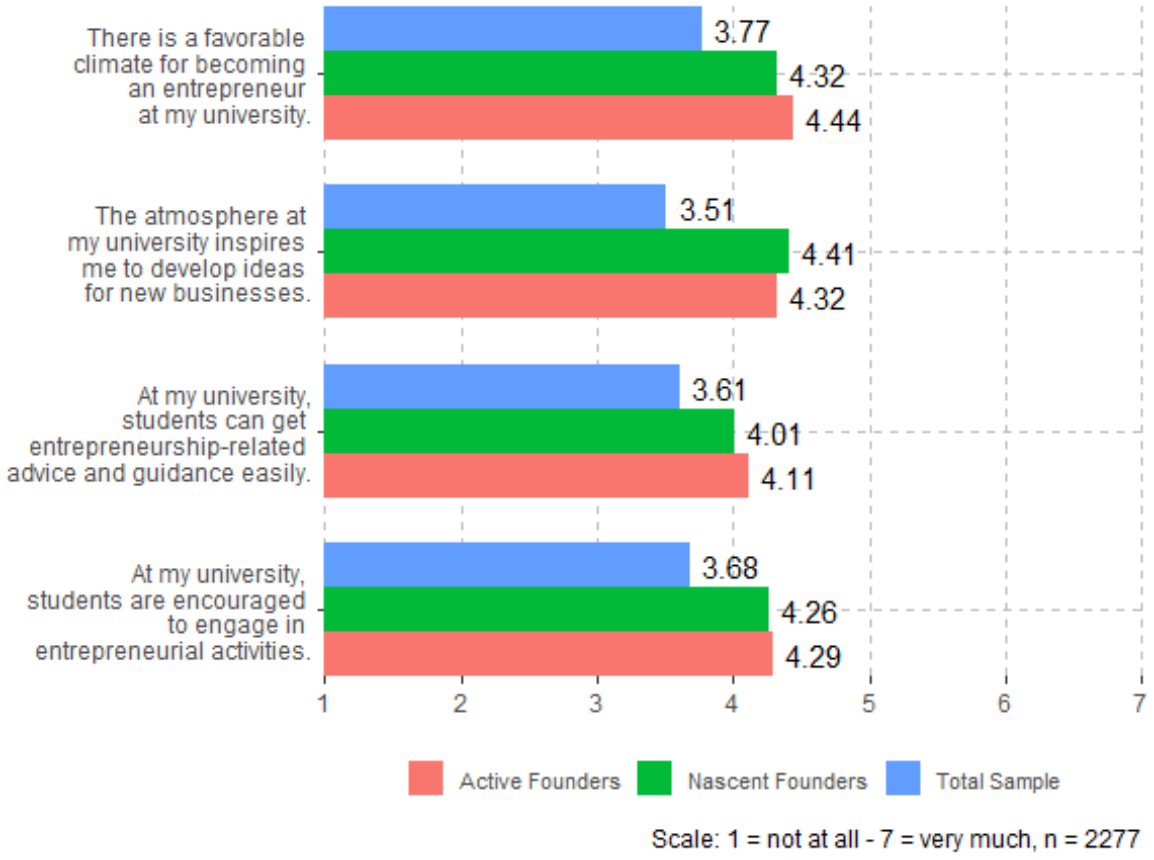


2.1.7 Assessment of the impact of the university on the development of students' competencies

The study analyses the students' perception of the university environment concerning the encouragement of entrepreneurial intentions and activities. Respondents were asked to assess their level of agreement with statements on a seven-point Likert-scale ranging from "not at all" [1] to "very much" [7].

There are hardly any visible differences in the perception of active founders and nascent founders. However, active and nascent founders perceive the university environment as much more as encouraging entrepreneurship than other students (Figure 7). This might be linked with increased knowledge of their university's offerings for support.

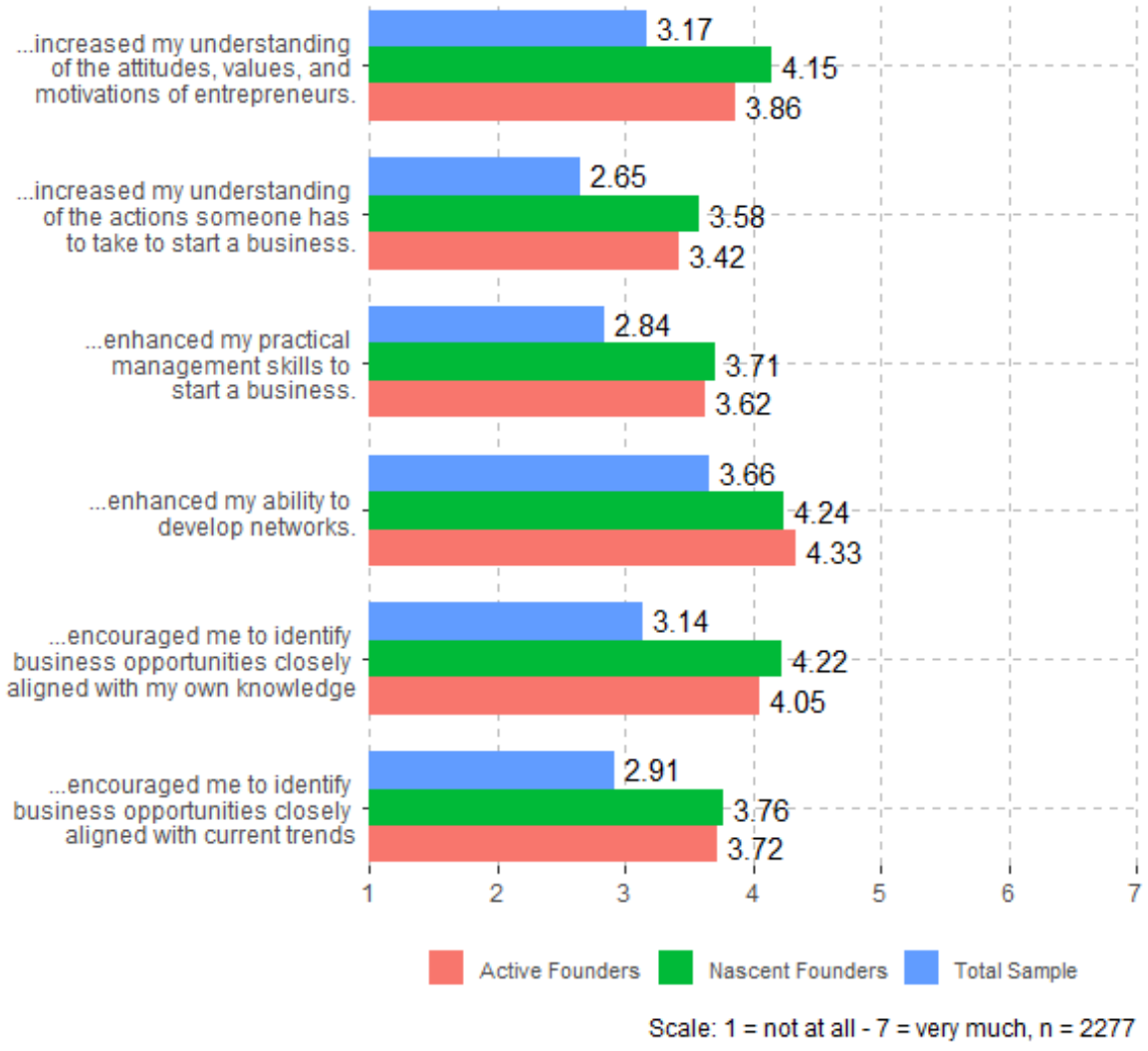
Figure 7: Assessment of the university environment to foster entrepreneurship



Moreover, compared with the results of the previous two waves of the survey, it appears that the overall assessment of the university environment has stabilized at its current level after a phase of steady increase the years before. Educational programs and courses at the university level aim at fostering the development of entrepreneurial motivations, intentions and skills. The study focuses on the self-assessment of students' entrepreneurial competency development related to all university courses and offerings in which they have participated (not only entrepreneurship

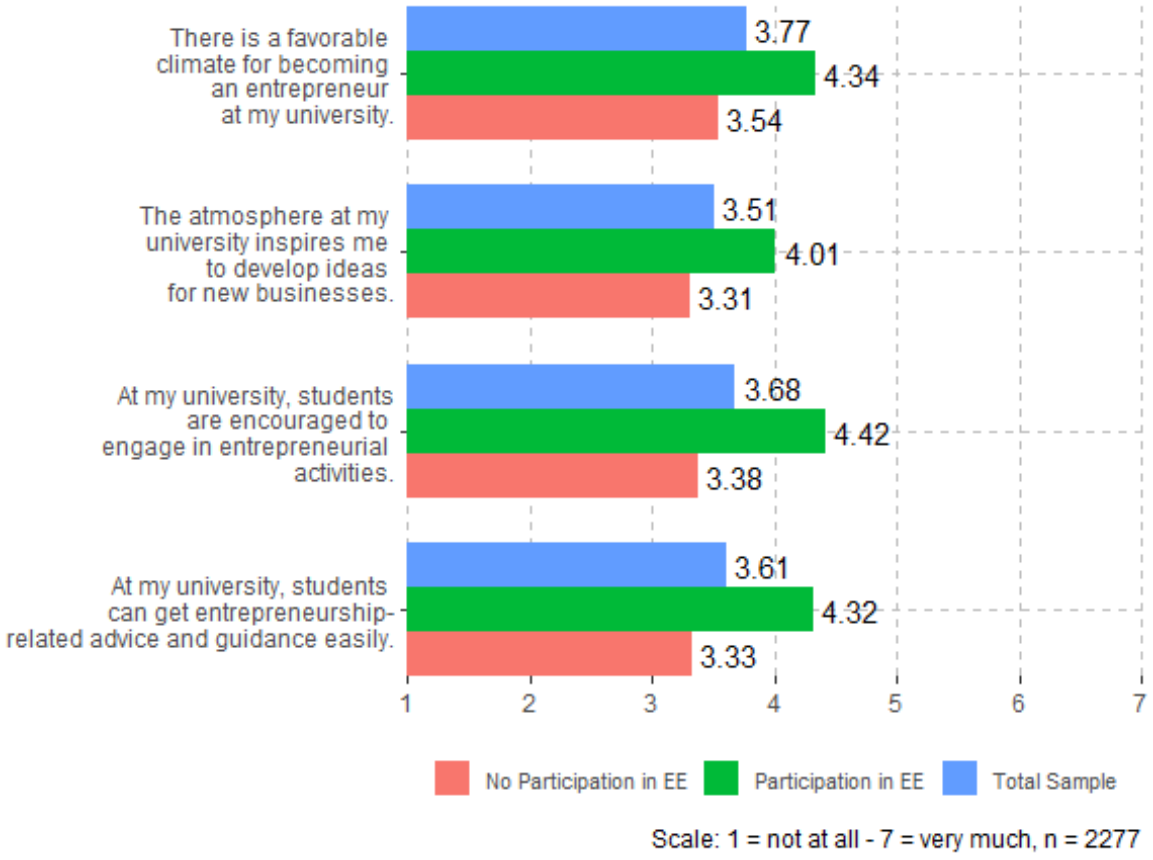
courses!) (Figure 8). Active founders – and even more pronounced nascent founders – rate the impact of university offerings on the development of their entrepreneurial competencies higher than the total sample. Overall, it can be concluded that courses and extracurricular activities of the university mainly enhance the ability to develop networks, to identify business opportunities and increase the students' understanding of entrepreneurial attitudes and values. So, f.i. nascent founders conclude that the university offerings enhanced their practical management skills to start a business remarkably higher than the total sample average (a mean of 3.71 in comparison to 2.84).

Figure 8: Student's assessment of the university offerings concerning the development of their competences: The university courses and offerings I attended…



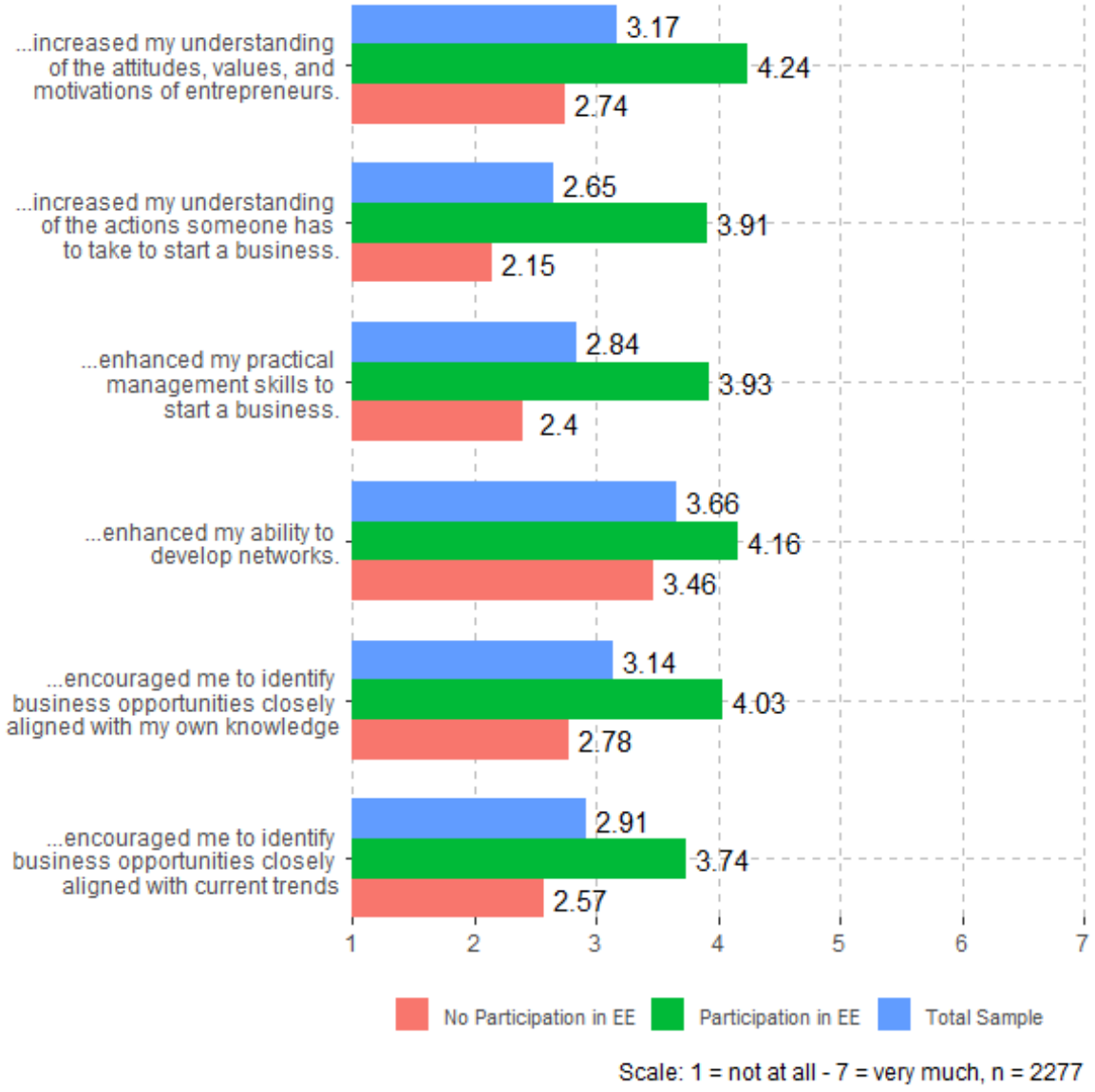
Furthermore, figure 9 shows that students participating in Entrepreneurship Education assess the impact of the university environment on their competencies throughout significantly more positive than non-participants.

Figure 9: Assessment of the university environment to foster entrepreneurship by participation in Entrepreneurship Education



Students describe the benefit of their universities offerings to improve several skills and areas of expertise in the field of entrepreneurship. Here too, participants in Entrepreneurship Education report a much higher benefit of their education. For example, they report a highly “increased understanding of the actions someone has to take to start a business” with a mean of 3.9 (on a 7-point Likert scale) compared to a mean of 2.1 by non-participants in Entrepreneurship Education.

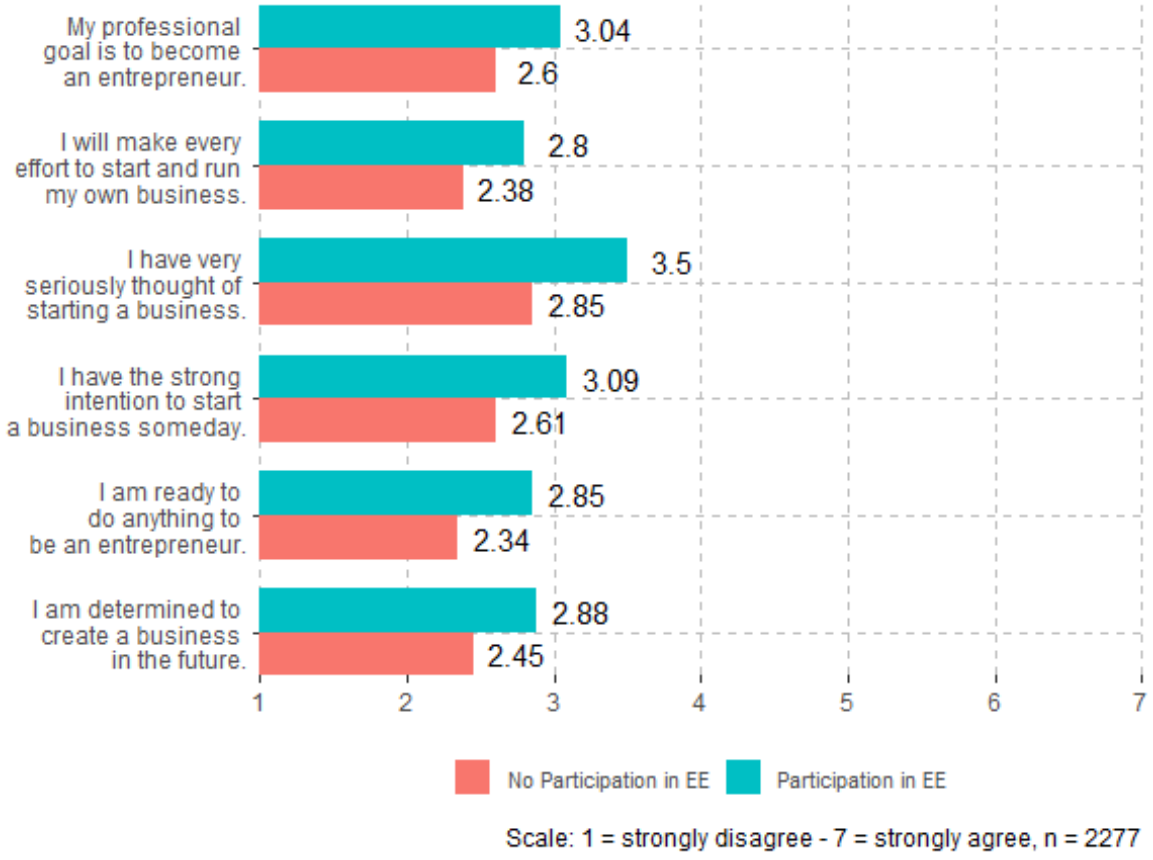
Figure 10: Students' assessment of the university offerings concerning the development of their competences by participation in Entrepreneurship Education: The university courses and offerings I attended…



2.1.8 Founding intentions by participation in Entrepreneurship Education

Figure 11 shows that the founding intentions of students who participate in Entrepreneurship Education measures is remarkably higher than those of non-participants.

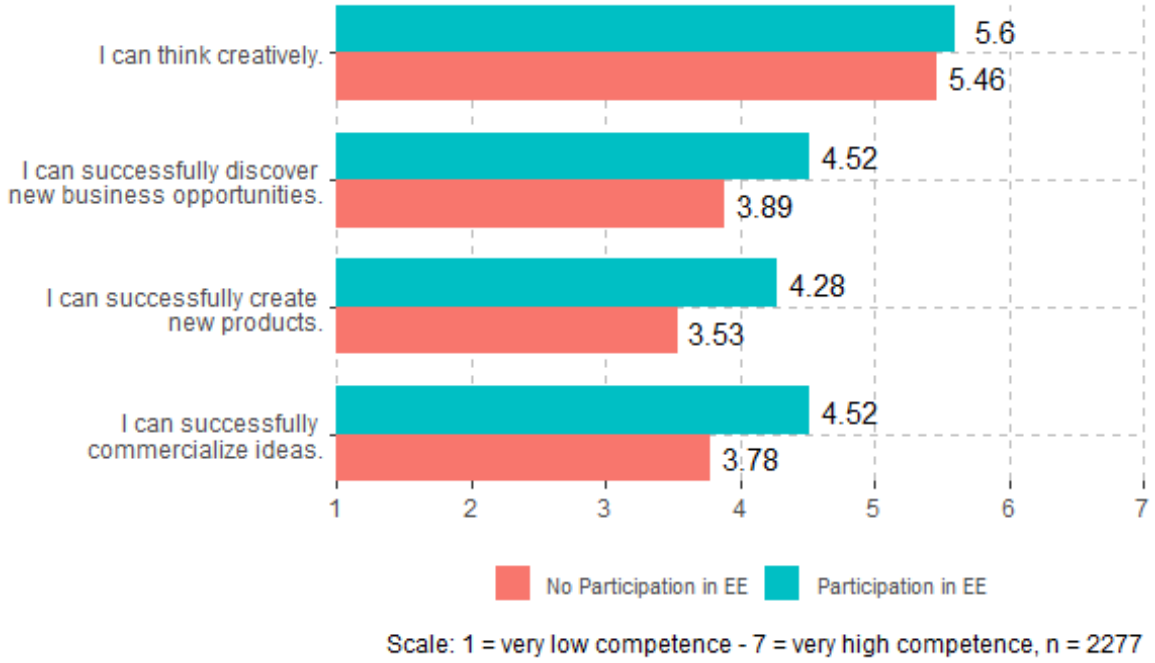
Figure 11: Founding intentions by participation in Entrepreneurship Education



2.1.9 Entrepreneurial competences and skills by participation in Entrepreneurship Education

Entrepreneurial competences and skills play an important role in the successful creation of new ventures. Comparing participants and non-participants of Entrepreneurship Education, we can see (Figure 12) that students who attended Entrepreneurship Education measures rate their competencies consistently higher than non-participating students, with the exception of the perceived creativity (f. i. the competence to successfully commercialize ideas.: 4.52 in comparison to 3.78 on a 7-point Likert scale).

Figure 12: Self-Assessment of entrepreneurial competences by participation in Entrepreneurship Education



3 Career choice intentions

3.1 Career choice intentions directly after and 5 years after graduation

The expressed intention to aspire either self-employment or employment directly after studies respectively five years after graduation can serve as a first indicator for the strength of an individual entrepreneurial attitude. Alumni studies show that the career goals expressed in student surveys are to a considerable extent put into practice.

Generally seen (Figure 13) it can be stated that directly after graduation 42% intend to start their career as an employee in a firm (23% in an SME, 19% in a large firm). Another 17% of the respondents prefer an employment in the public service, a strong increase compared to the 2021 GUESSS survey. An academic career path is preferred by 8%. The non-profit sector is the most likely career option for 3%. About 7% want to found their own business. About 1.6% aim to take over an already existing company (1.1% successor in parents' / family's firm and 0.4% successor in a firm currently not controlled by the family).

However, five years after graduation, with more professional experience, know-how and know-whom, the picture looks quite different:

- 21% of the respondents intend to found their own company 5 years after studies and 3% of the students are interested in taking over an existing company (1% as a successor in the family business, 2% as a successor in a business currently not controlled by their family) as a career option. So in total 24% of the students see themselves as entrepreneurs after having acquired professional experience.

- The percentage of students who seek employment either in the private or public sector drops to under 57% (16% in a large firm, 15% in a SME, 15% in the public sector, 9% in academia and 3% in a non-profit organization).

Compared to the last two rounds of GUESSS it can be stated that, although direct comparisons between the waves of the study should be taken cautiously, the founding intentions in 5 years have plateaued at 21% this year (figure 13), compared to 24% in 2021 and 18% in 2019.

Figure 13: Career choice intentions: directly after studies and 5 years after graduation

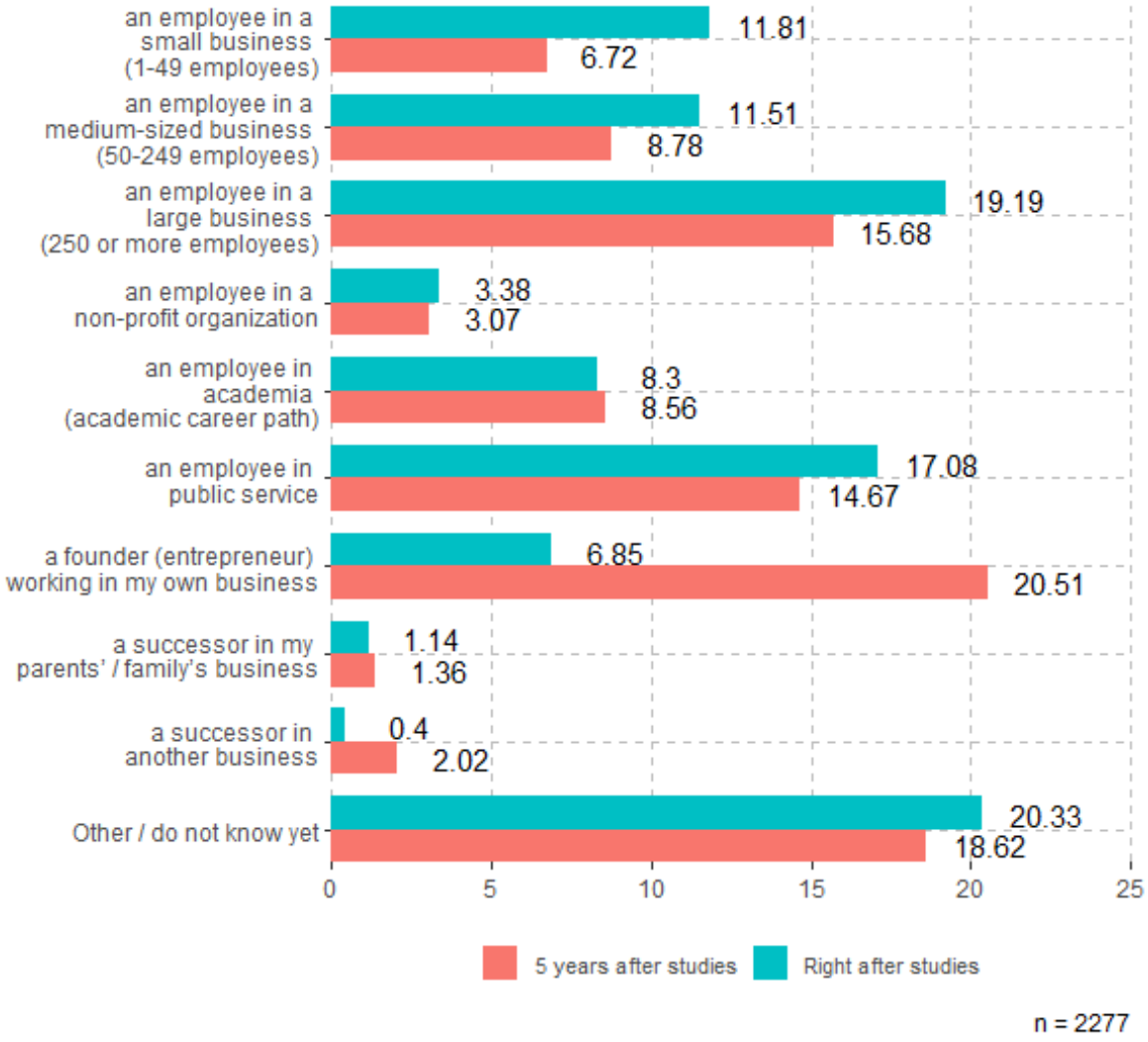
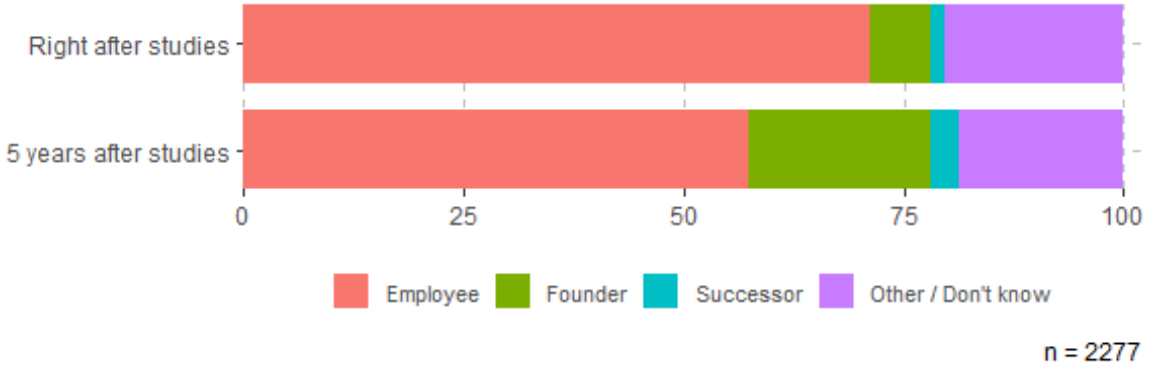


Figure 14: Grouped career intentions right after and 5 years after studies



However, do students' career preferences remain stable or not? Table 1 reveals that 83% of the students who want to be self-employed right after finishing their studies also intend to remain entrepreneurs 5 years later on. The same tendency applies to students who aim to start as a business successor (f.i. in their family business). They see themselves still as entrepreneurs, either as business successors or as founders of their own enterprise. Students who want to be employees in SME's tend to remain in this company size (43%), but there is a remarkable shift as almost a third of them intend to be self-employed (23%) or business successor (6%) 5 years later. Students who would like to start their career in larger enterprises also tend to stay in this company size (58%) but about 21% see themselves as self-employed or business successors later on. Students planning to be employed in NPOs, public service or in academia mostly see themselves also in these positions 5 years later on (70%), but among them too about 15% aim to become self-employed.

The overall picture given in Table 1 shows that the decision for a career as an entrepreneur may be taken directly after the end of studies, but also later on. Especially students which begin their work experience as employees in start-ups, other SME or larger enterprises often, see a later shift into self-employment as a worthwhile option after having gained practical experience.

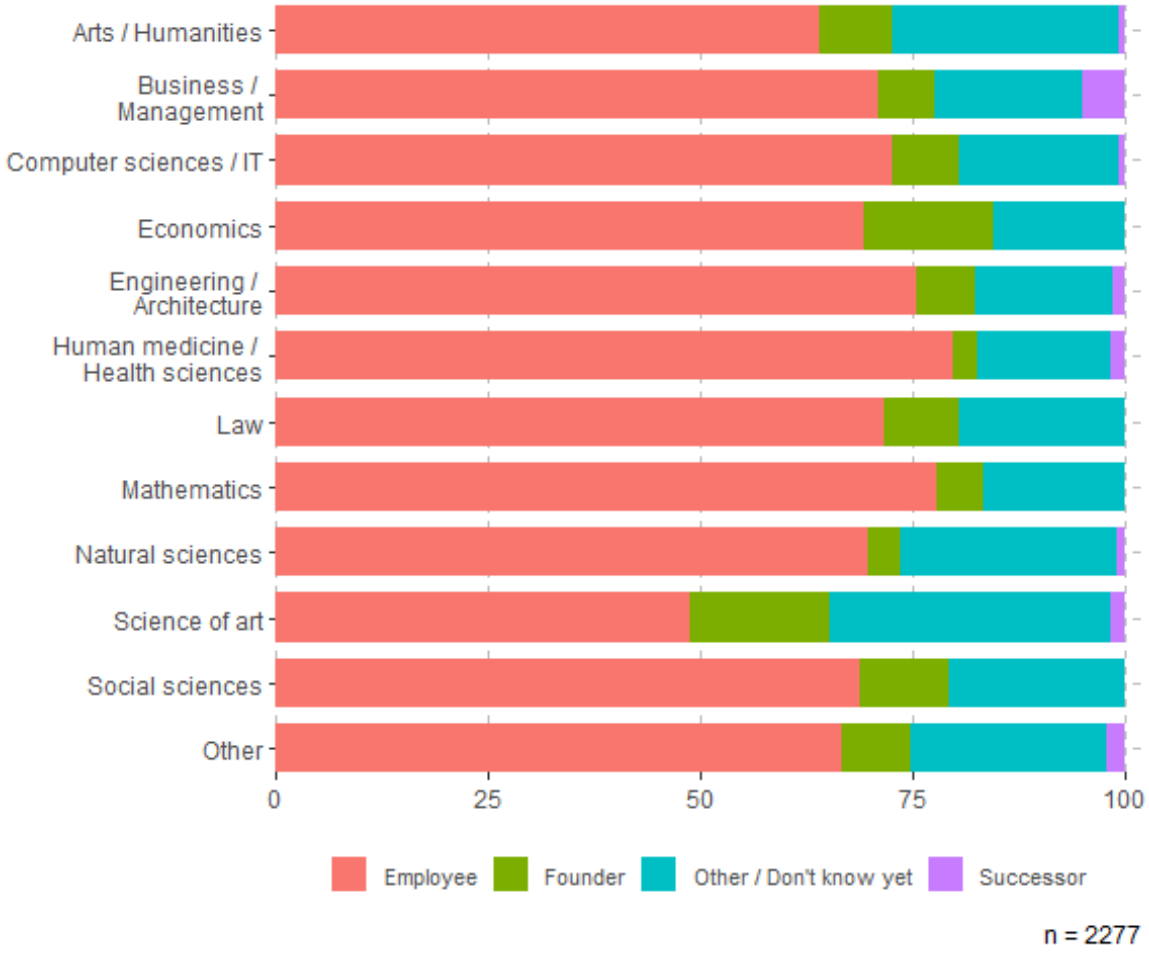
Table 1: All Participants: Career choice intentions: Expected changes in 5 years

Right after studies	5 years later					
	Employee (SME)	Employee (Large)	Employee (Other)	Self-employed	Successor	Other / do not know yet
Employee (SME) (n=531)	**41,1%**	8,5%	7,3%	**27,1%**	5,3%	10,7%
Employee (Large) (n=437)	7,8%	**60,6%**	6,2%	**16,2%**	2,5%	6,6%
Employee (NPO, public, acad.) (n=655)	6,0%	3,1%	**71,6%**	**8,5%**	0,6%	10,2%
Self-employed (n=156)	2,6%	1,3%	5,8%	**83,3%**	1,9%	5,1%
Successor (n=35)	0,0%	0,0%	0,0%	**14,3%**	**80,0%**	5,7%
Other / do not know yet (n=463)	12,5%	5,4%	11,9%	**13,2%**	0,6%	**56,4%**

3.2 Career choice intentions by field of study

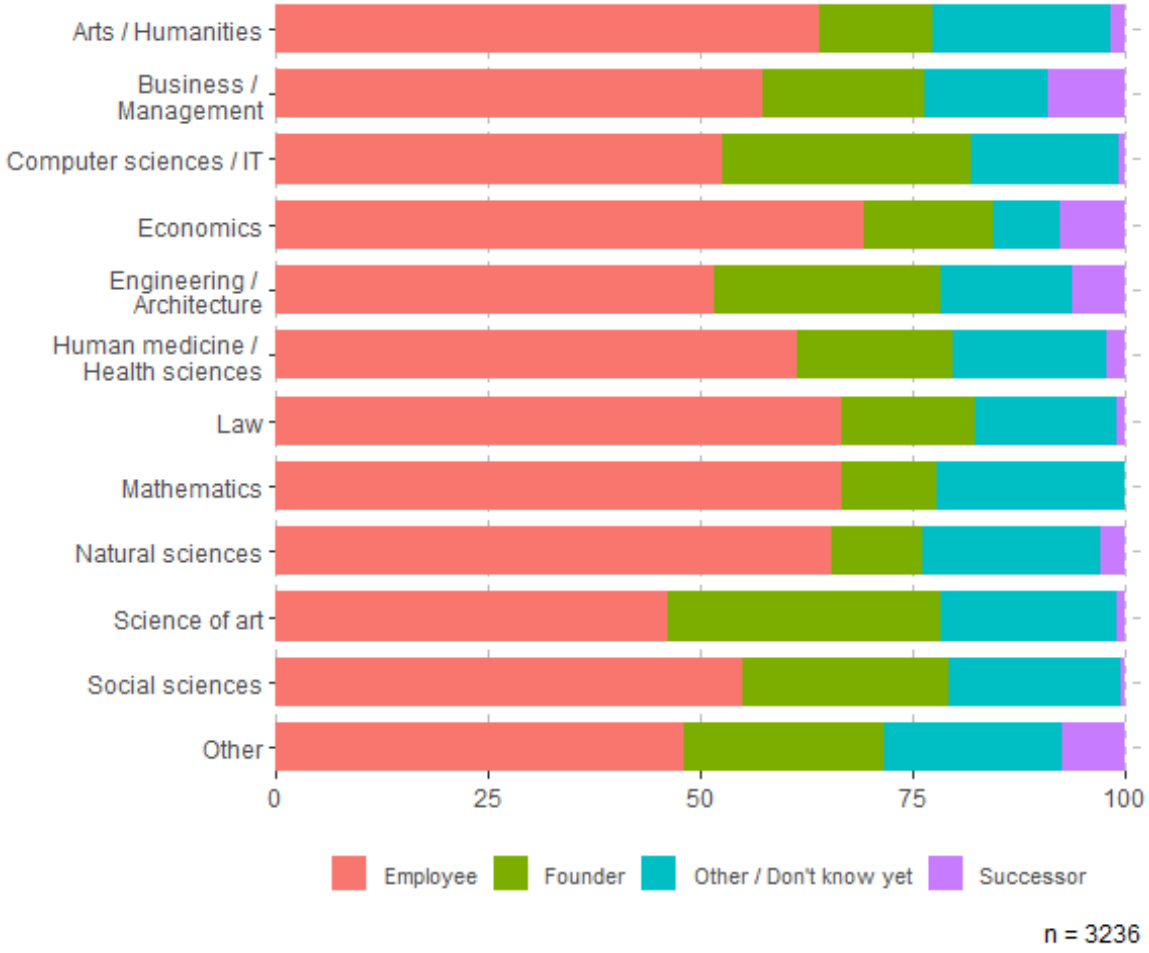
Figure 15 illustrates the career choice intentions directly after studies broken down by the field of study. Of course, the career choice intentions not only are influenced by perceived business opportunities, but also by the labour market situation for the respective field of study. Entrepreneurship may be opportunity-based as well as necessity-based.

Figure 15: Career choice intentions right after graduation by fields of study



Five years after graduation self-employment becomes more important for all fields of study, compared to career paths in established companies (Figure 16). In most fields of study one out of four up to one third of the responding students perceive themselves as self-employed mostly as founders, but also as business successors. Students in the fields of business and management, IT and computer sciences, engineering, but also science of art have the highest percentages of self-employment intent.

Figure 16: Career choice intentions five years after graduation by fields of study

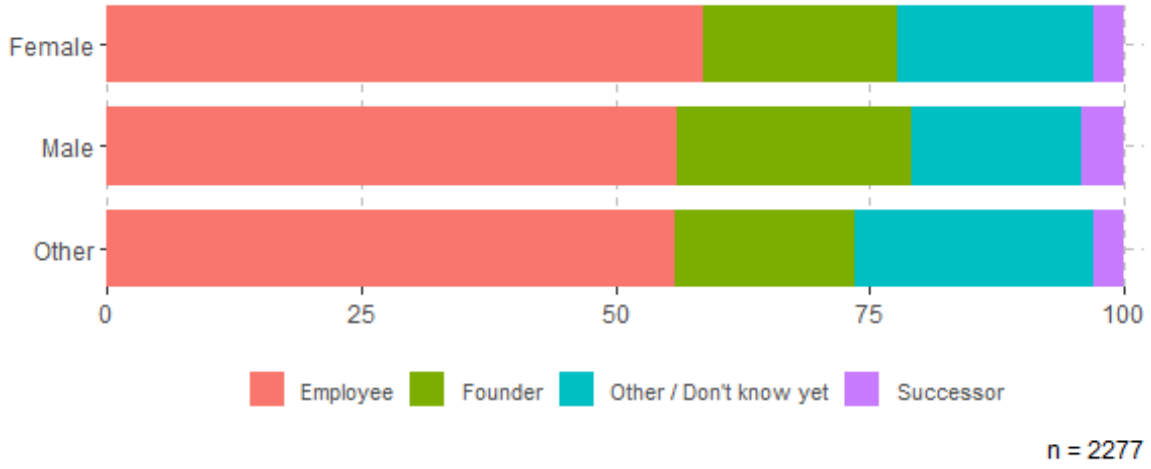


3.3 Career choice intentions by gender

Directly after graduation 12% of the male graduates and 15% of non-binary graduates, but only 6% of the female graduates intend to start an entrepreneurial activity (either as a founder or successor).

In a five-year perspective 27% of the male, 20% of non-binary graduates and 22% of the female respondents plan to pursue an entrepreneurial career. It can be stated that a gender gap still exists, but it begins to close after some years of practical experience (Figure 17).

Figure 17: Career choice intentions five years after graduation by gender



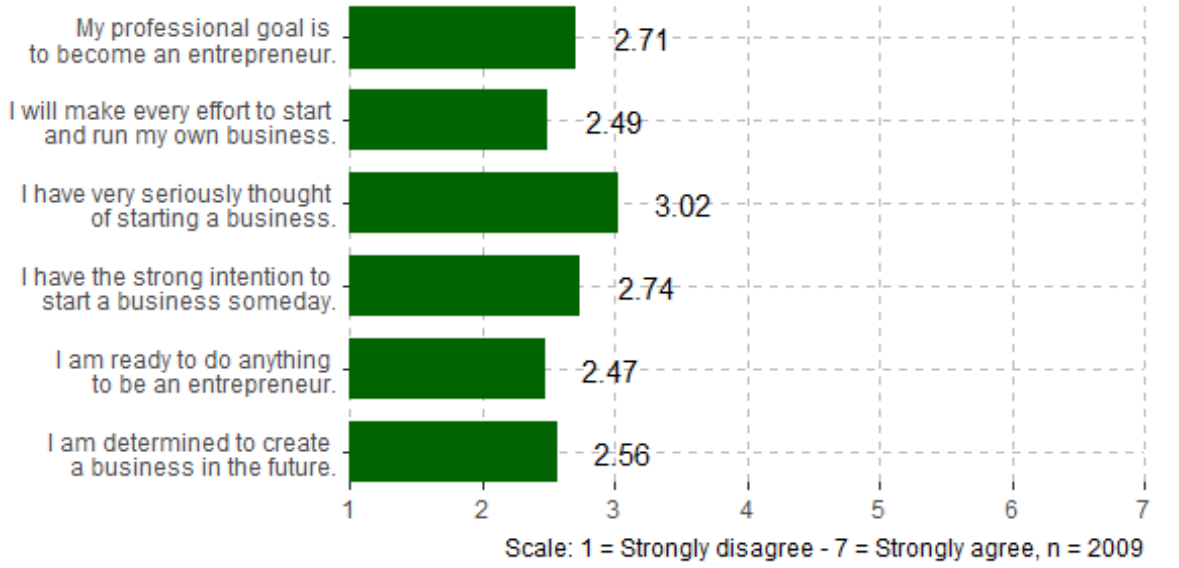
4 Students and Entrepreneurship

This section addresses the entrepreneurial intentions and attitudes of participating students (n = 2009), but excluding active founders (n = 110) and nascent founders (n = 201), which will be discussed in detail in chapters 5 and 6.

4.1 Founding intentions

The intention to pursue an entrepreneurial career depends upon demographic, social and personality factors as well as on the personal attitude towards entrepreneurship. Figure 18 shows the items of the founding intention construct (based on a subsample of students which are neither active nor nascent entrepreneurs). Overall, the mean across all questions remains below a value of 3 on the 7-point Likert scale.

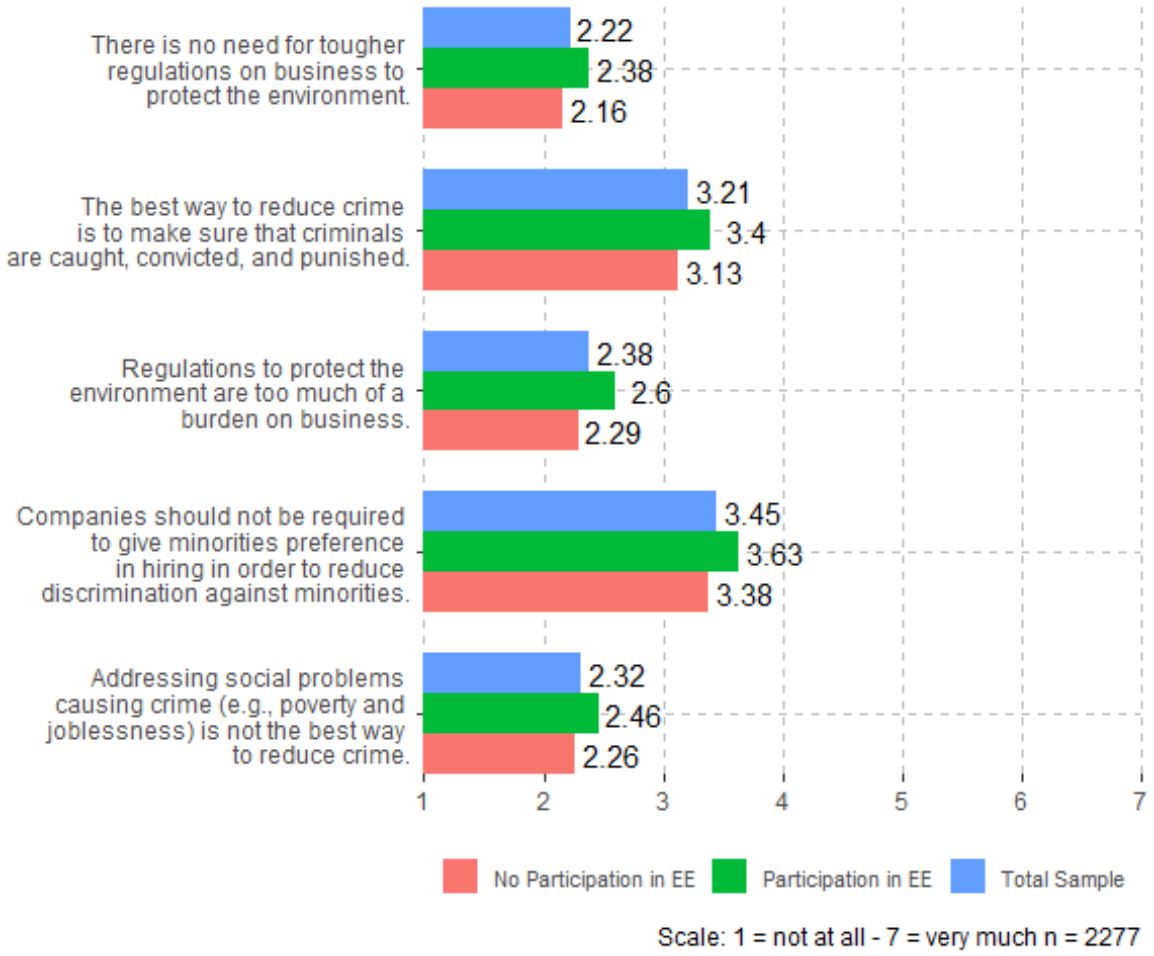
Figure 18: Founding intentions



4.2 Stance on regulatory issues

This year's edition of the GUESSS study included a series of questions to assess the student's attitude towards state regulation on a number of issues. To achieve this the participants were asked to indicate the extent to which they agree with a number of statements on a 7-point Likert scale. Among these issues it appears remarkable that the "need for tougher regulations on business to protect the environment" reaches rather high support among the participants (mean: 2.2), whereby the participation in Entrepreneurship Education makes hardly any difference. Similarly, most students in the sample do not consider regulations to protect the environment to be too much of a burden on business (mean: 2.4). This reflects the general rise in awareness and urgency that ecological issues have gained in global political debates.

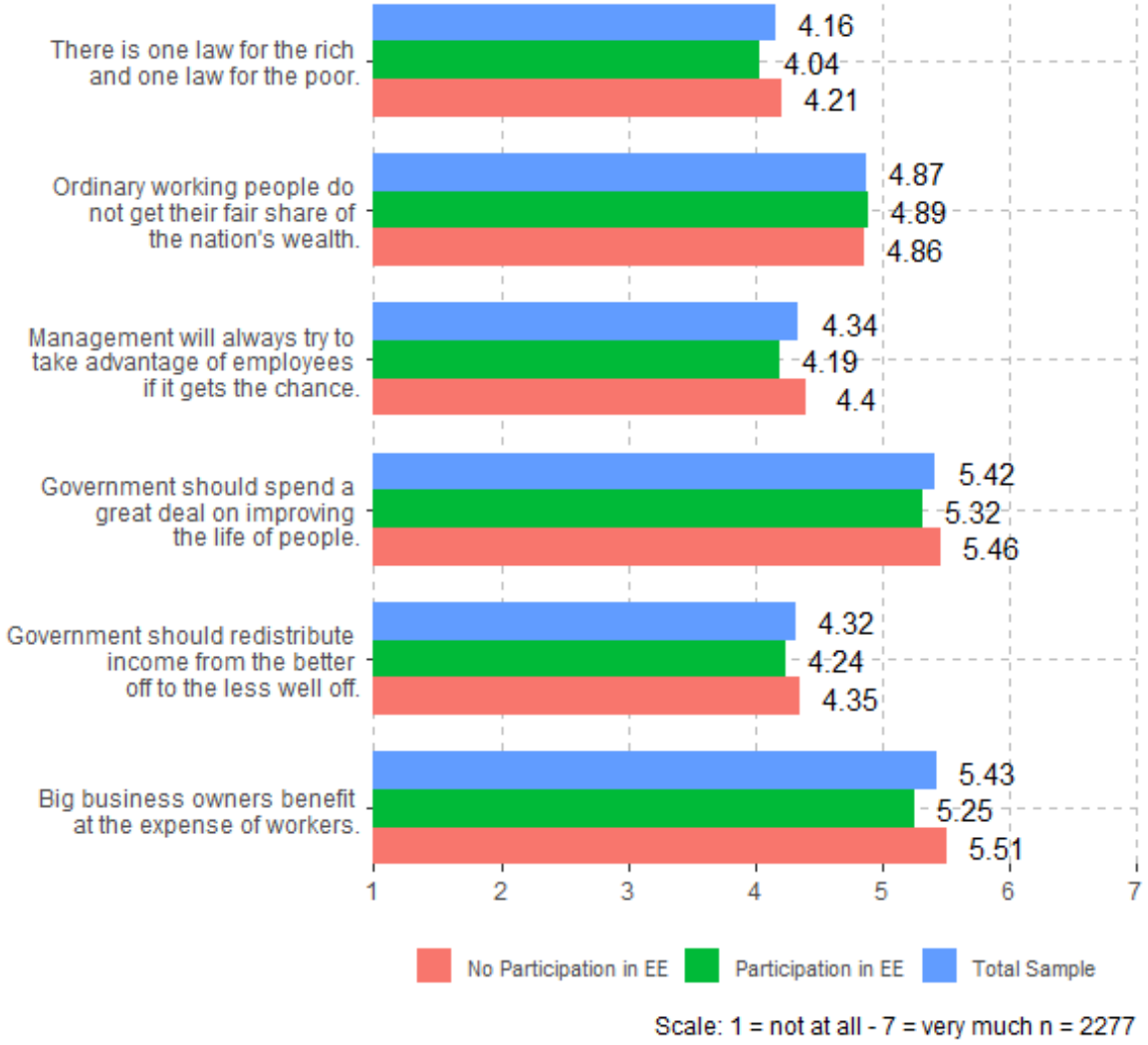
Figure 19: Please indicate the extent to which you agree with the following statements



4.3 Stance on social and work issues

Similarly, this edition of the GUESSS study included a set of questions addressing the stance of participants towards regulatory efforts in the domain of economic equality. Again, the participants were asked to indicate the extent to which they agree with a number of statements on a 7-point Likert scale. Here the most agreeable statements in the questionnaire were: “Big business owners benefit at the expense of workers.” (mean: 5,4), “Government should spend a great deal on improving the life of people.” (mean: 5,4), followed by “Ordinary working people do not get their fair share of the nation’s wealth.” (mean: 4,9). Therefore, it appears that students in this survey are mostly on favour of political measures supporting economic equality. Again, the participation in Entrepreneurship Education shows hardly any differences in the answering patterns.

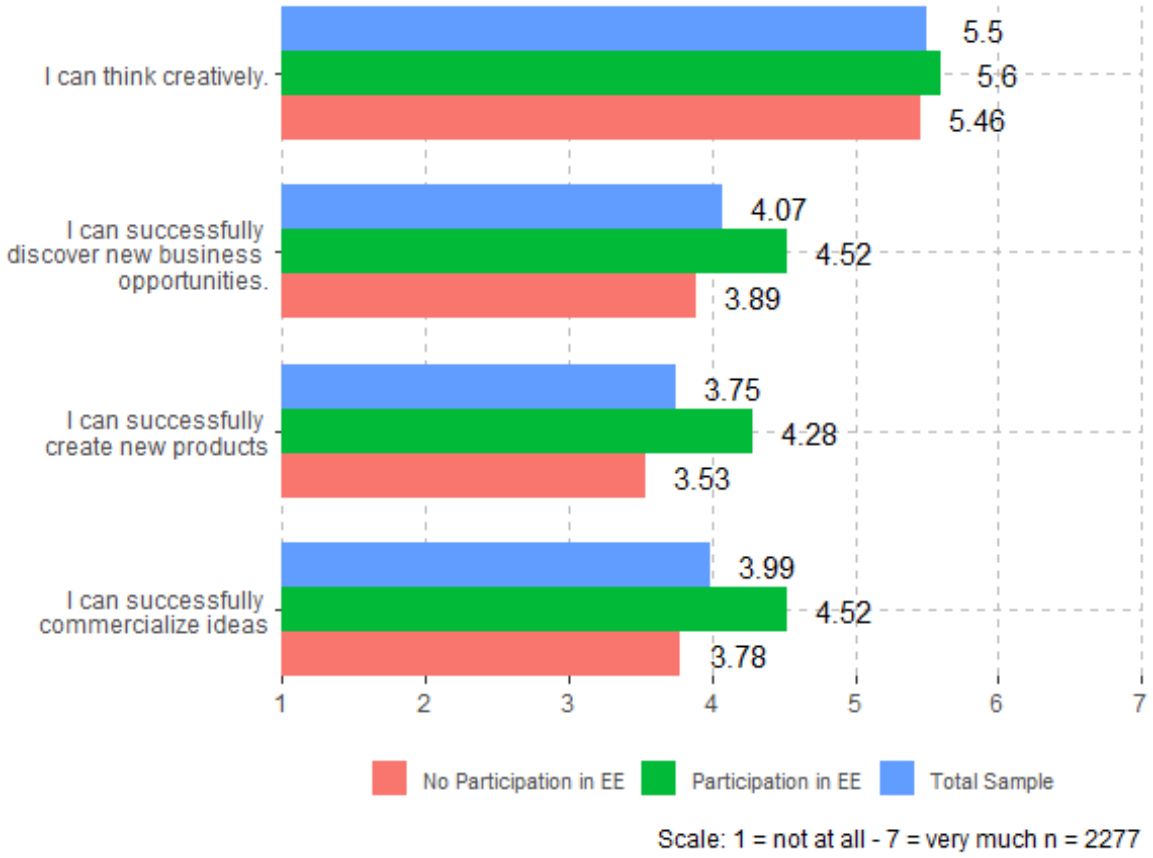
Figure 20: Please indicate the extent to which you agree with the following statements



4.4 Entrepreneurial competences and skills

Competences and skills play an important role in the successful creation of new ventures. To creativity and the ability to identify new business opportunities, create new products and commercialize ideas are essential competences and skills in the context of start-ups. This self-assessment by students shows that participants in Entrepreneurship Education consider their abilities higher than non-participants in this year's sample (Figure 21).

Figure 21: Entrepreneurial competences by Participation in Entrepreneurship Education



5 Nascent founders

8,8% of the Austrian respondents (201 students) are nascent founders, meaning that they are currently trying to start their own business or to become self-employed.

5.1 Characteristics of the nascent founders

The average age of the nascent founders is 26.7 years. 52% of them are women and 56% of them are Austrian. About 16% of the nascent founders are studying in business and management fields, followed by 15% stemming from the sciences of art and 15% from social science fields.

39% of these nascent founders intend to found their own business or be a successor right after studies. 61% intend to found their own business or be a successor five years later. A considerable part of them can be considered as serial entrepreneur, as about 79% of students planning to found an enterprise are also already active entrepreneurs.

5.2 Foundation partners

55% of the nascent founders intend to start their business as a solo entrepreneur (figure 23). Among the other nascent founders most intend to cooperate with one co-founder (29%).

Figure 22: Number of Co-Founders

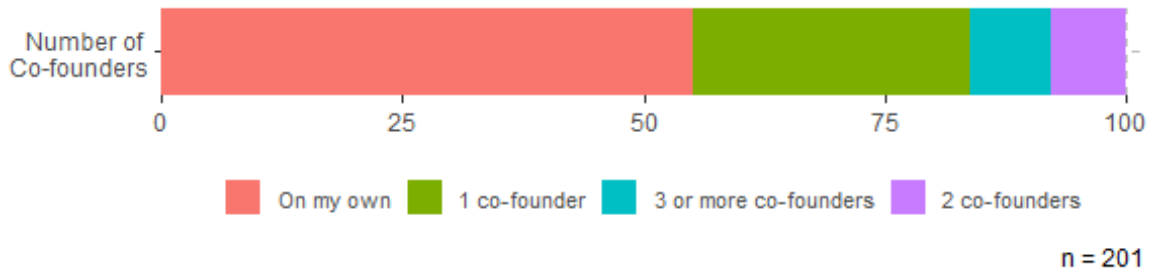
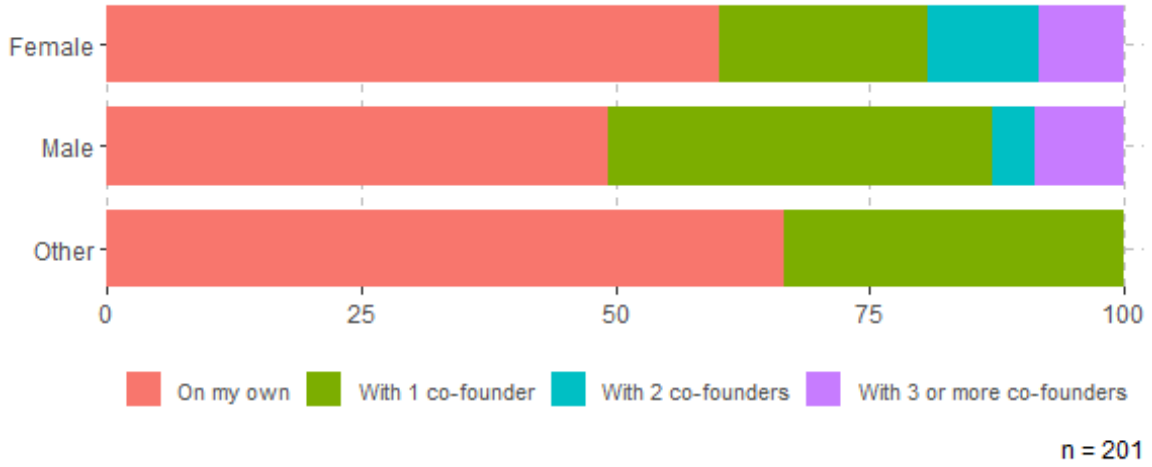


Figure 23 shows that 32% of the female nascent entrepreneurs intend to start their business alone, compared to 21% of their male counterparts.

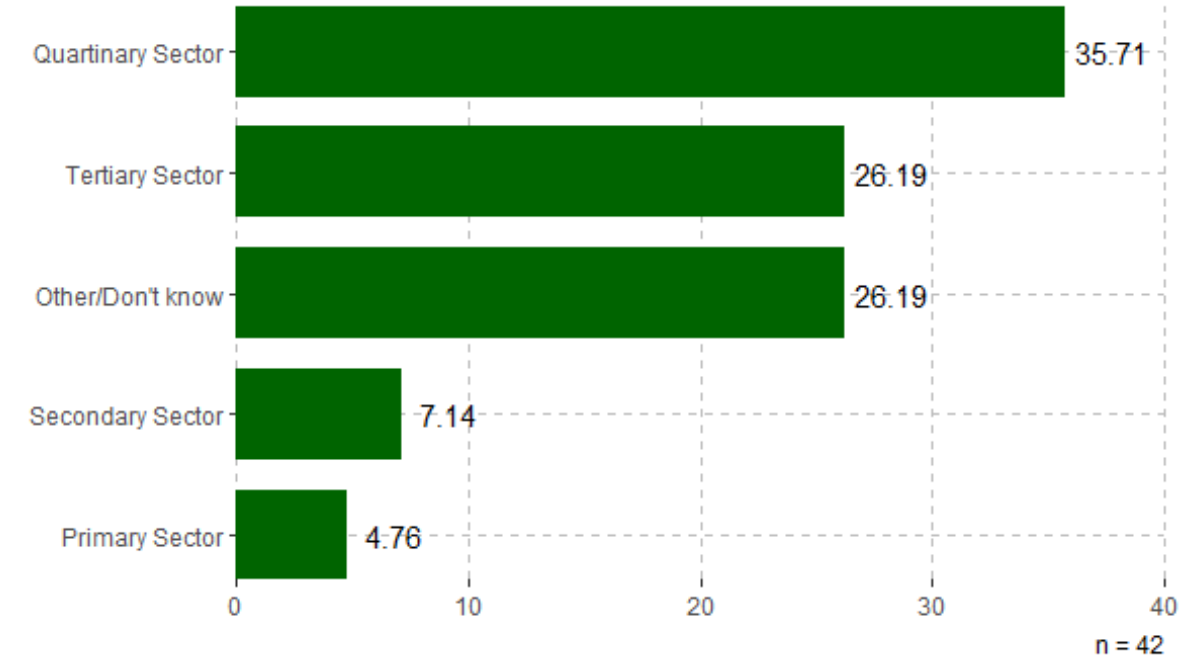
Figure 23: Number of Co-Founders by gender



5.3 Economic sectors

The nascent founders in this year's sample intent to found their businesses mostly in the quartinary economic sector (37%), followed by the tertiary sector (26%) and people who don't know which sector their business would be situated in (26%).

Figure 24: Economic sectors of newly founded businesses



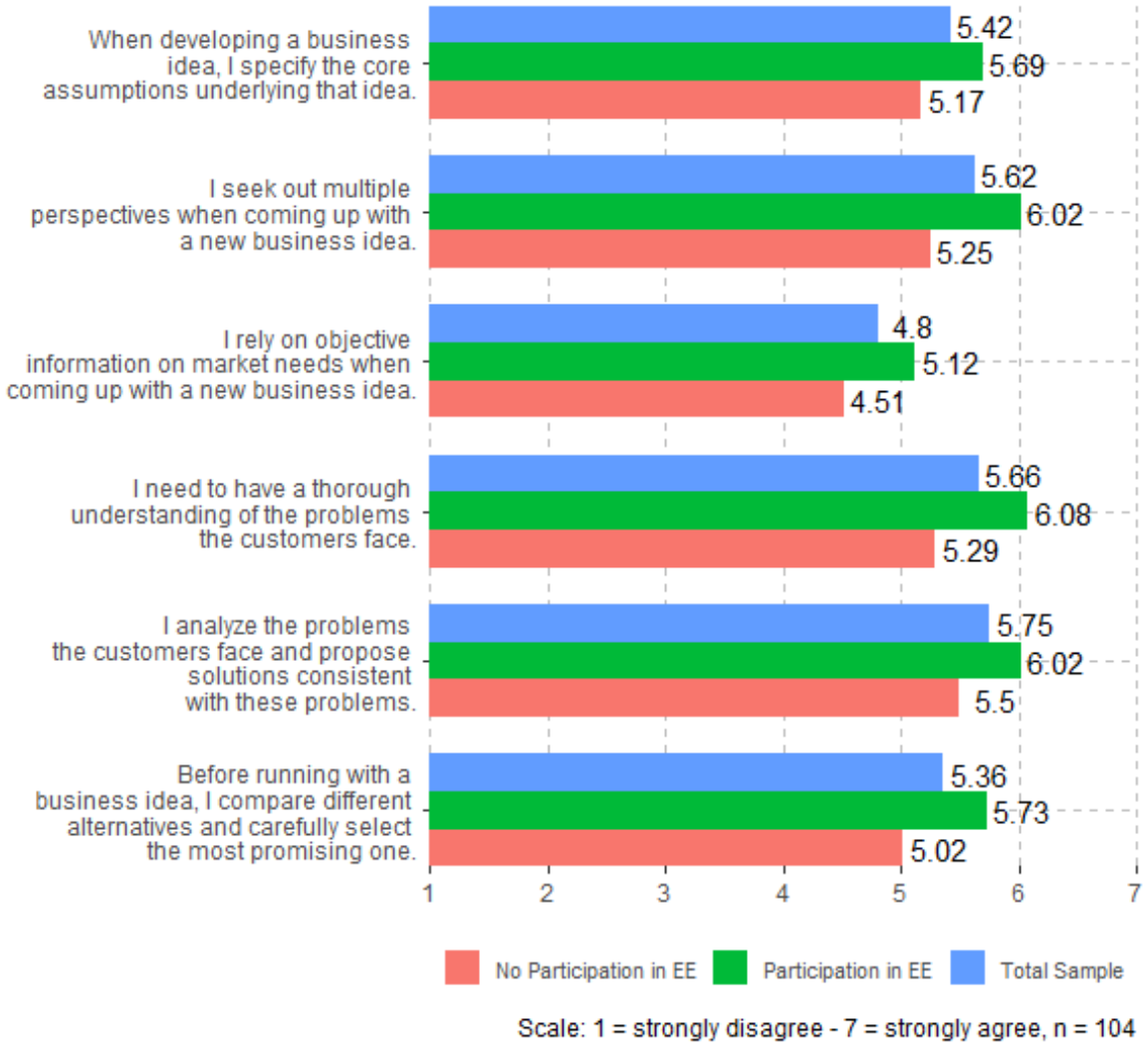
5.4 Ideation, testing and updating business ideas

This year's GUESSS Survey included an extensive questionnaire section to assess students' knowledge about aspects of business ideation, idea testing and updating of business ideas. The following sections will describe the average answers to these themes, split by participation in Entrepreneurial Education, to show potential knowledge improvements.

5.4.1. Knowledge about ideation

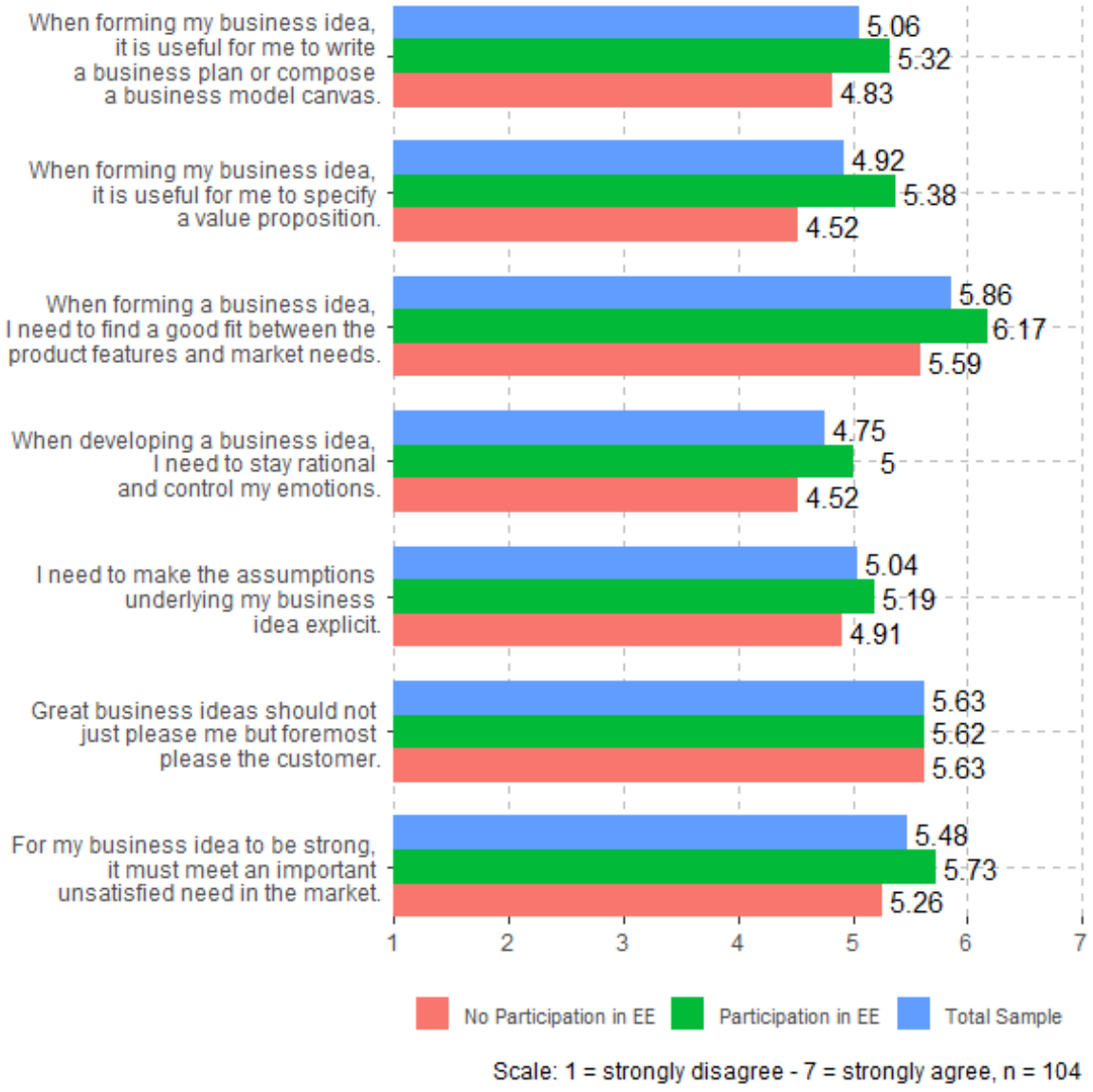
Regarding the knowledge about business ideation, our students were asked about their agreement with a number of statements on how they come up with your business idea on a 7-point Likert scale. These statements aim at multiple approaches to forming new business ideas. The most agreeable statements among them were "I analyze the problems the customers face and propose solutions consistent with these problems." (mean: 5.75), "I need to have a thorough understanding of the problems the customers face." (mean: 5.66) and "I seek out multiple perspectives when coming up with a new business idea." (mean: 5.62). The lowest overall agreement was reached at the statement "I rely on objective information on market needs when coming up with a new business idea." (mean: 4.8). Overall participants in Entrepreneurial Education report higher agreement to every statement made.

Figure 25: Agreement with statements on how to come up with a business idea



Further statements regarding the ideation of business ideas retained a very high level of agreement in the sample. The highest level of support was reached by the statements “When forming a business idea, I need to find a good fit between the product features and market needs.” (mean: 5.86), “Great business ideas should not just please me but foremost please the customer.” (mean: 5.63), and “For my business idea to be strong, it must meet an important unsatisfied need in the market.” (mean: 5.48). The lowest average agreement was found for the statement “When developing a business idea, I need to stay rational and control my emotions.” (mean: 4.75). Again the level of agreement appears to be higher for participants in Entrepreneurial Education, than non-participants.

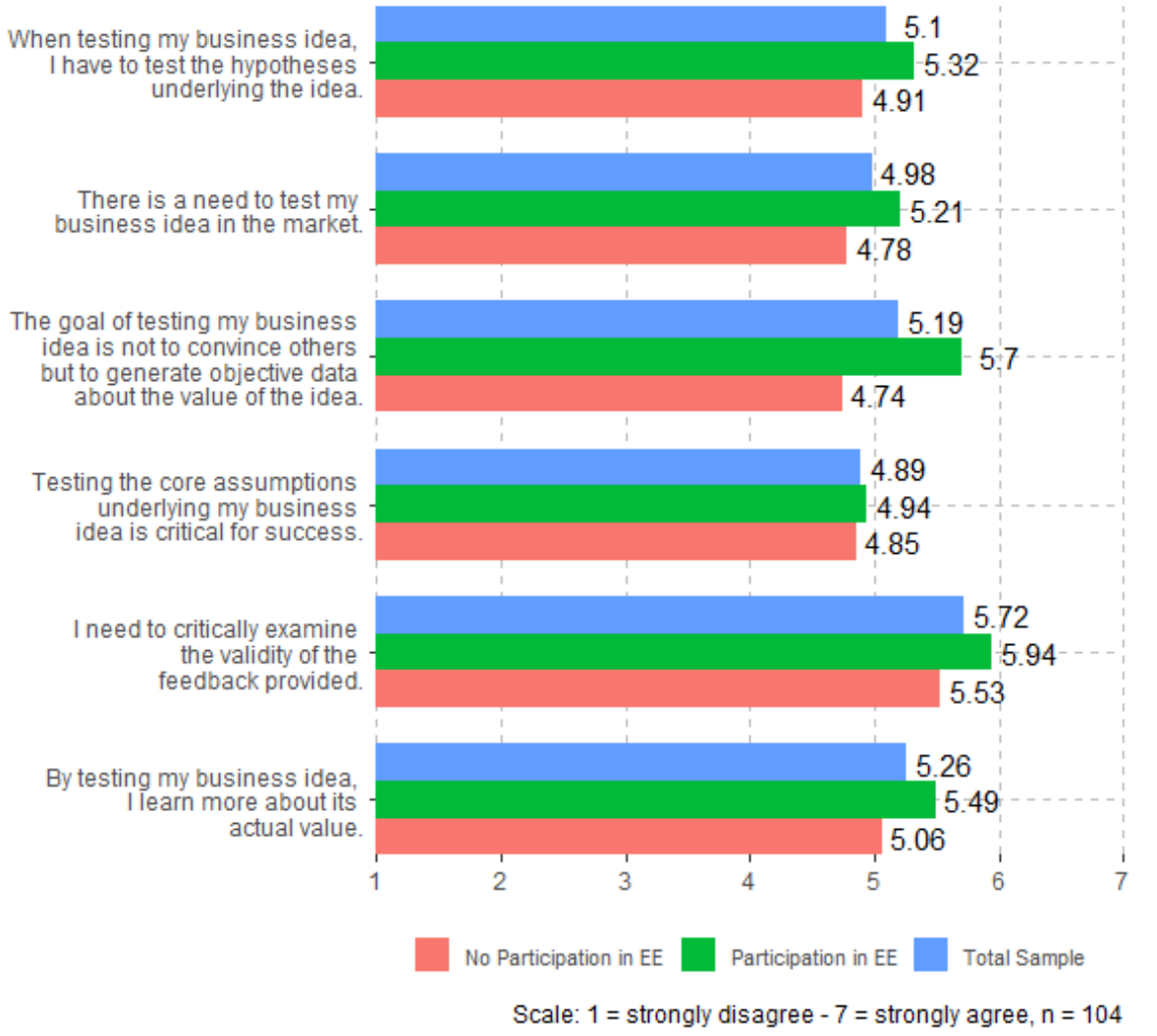
Figure 27: Agreement with statements on how to come up with a business idea



5.4.2. Knowledge about testing business ideas

Regarding the knowledge about testing business ideas, our students were asked about their agreement with a number of statements on how they come up with your business idea on a 7-point Likert scale. These statements aim at multiple approaches to testing and scrutinizing business ideas. The most agreeable statements among them were “I need to critically examine the validity of the feedback provided.” (mean: 5.72), “By testing my business idea, I learn more about its actual value.” (mean: 5.26) and “The goal of testing my business idea is not to convince others but to generate objective data about the value of the idea.” (mean: 5.19). The lowest overall agreement was reached at the statement “Testing the core assumptions underlying my business idea is critical for success.” (mean: 4.89). Overall participants in Entrepreneurial Education report higher agreement to every statement made.

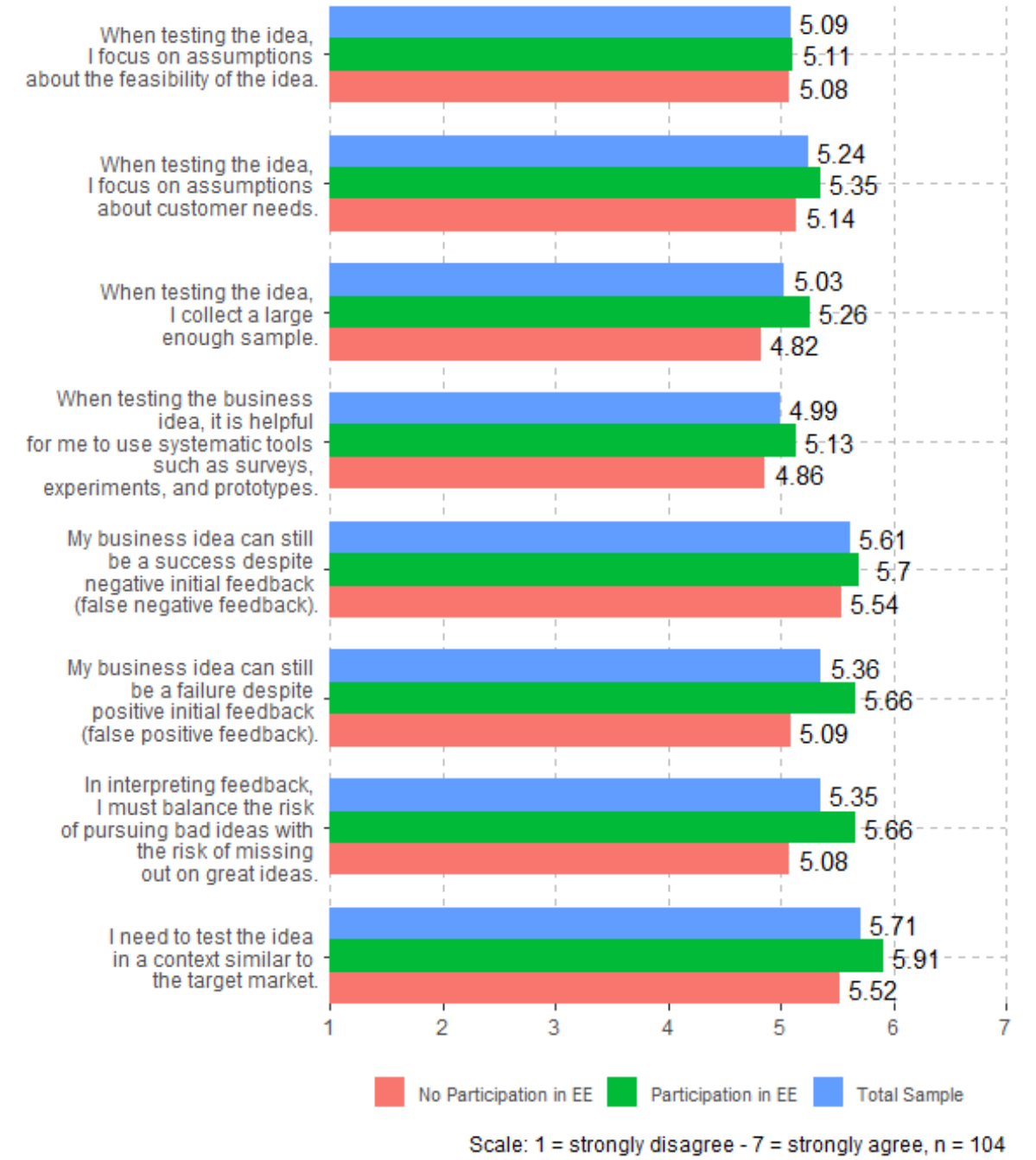
Figure 27: Agreement with statements on how to test business ideas



Further statements regarding the testing of business ideas retained a very high level of agreement in the sample. The highest level of support was reached by the statements “I need to test the idea in a context similar to the target market.” (mean: 5.71), “My business idea can still be a success

despite negative initial feedback (false negative feedback)." (mean: 5.61), and "My business idea can still be a failure despite positive initial feedback (false positive feedback)." (mean: 5.36). The lowest average agreement was found for the statement "When testing the business idea, it is helpful for me to use systematic tools such as surveys, experiments, and prototypes." (mean: 4.99). Again, the level of agreement appears to be higher for participants in Entrepreneurial Education, than non-participants.

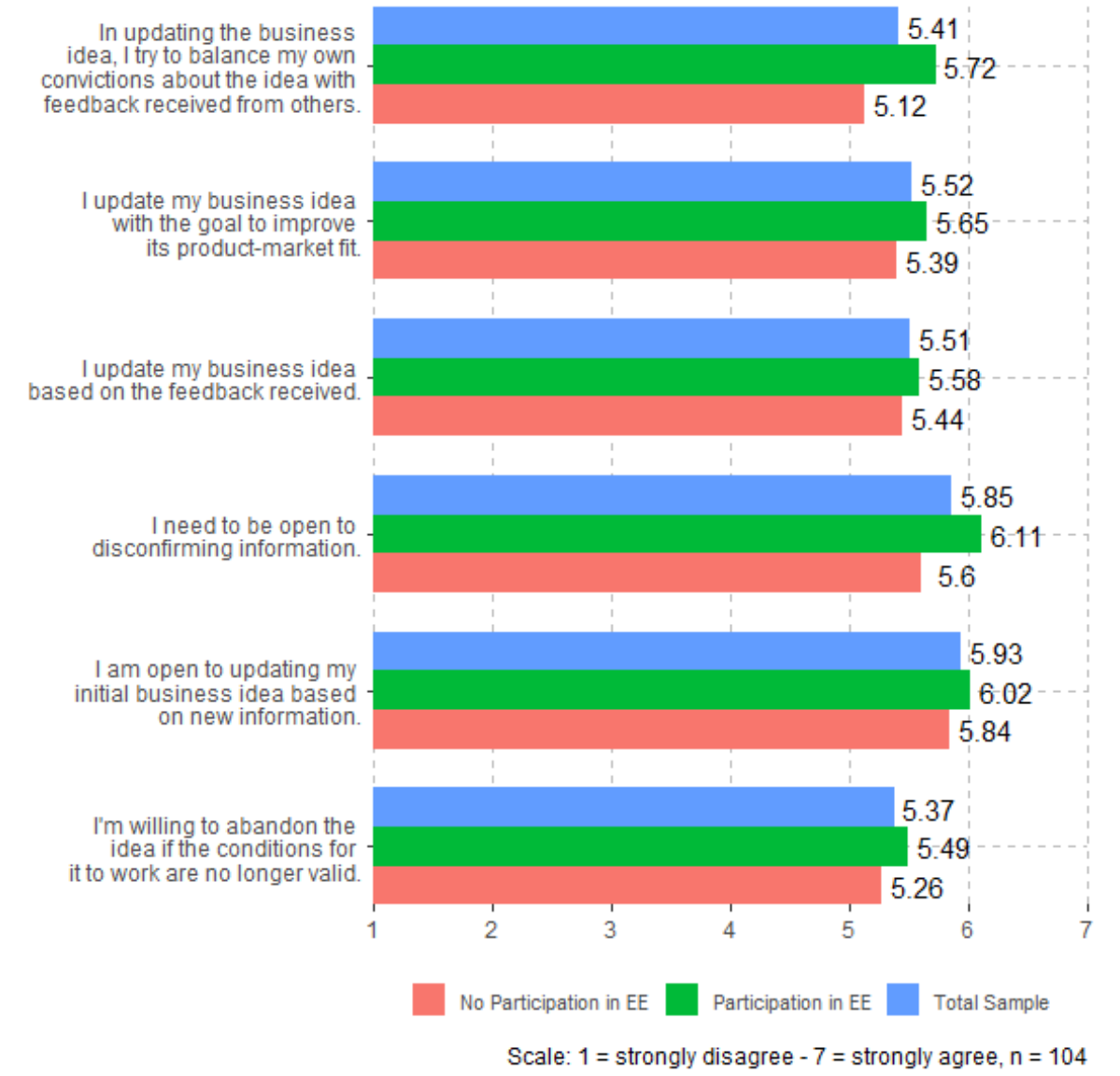
Figure 28: Agreement with statements on how to test business ideas



5.4.3. Knowledge about updating business ideas

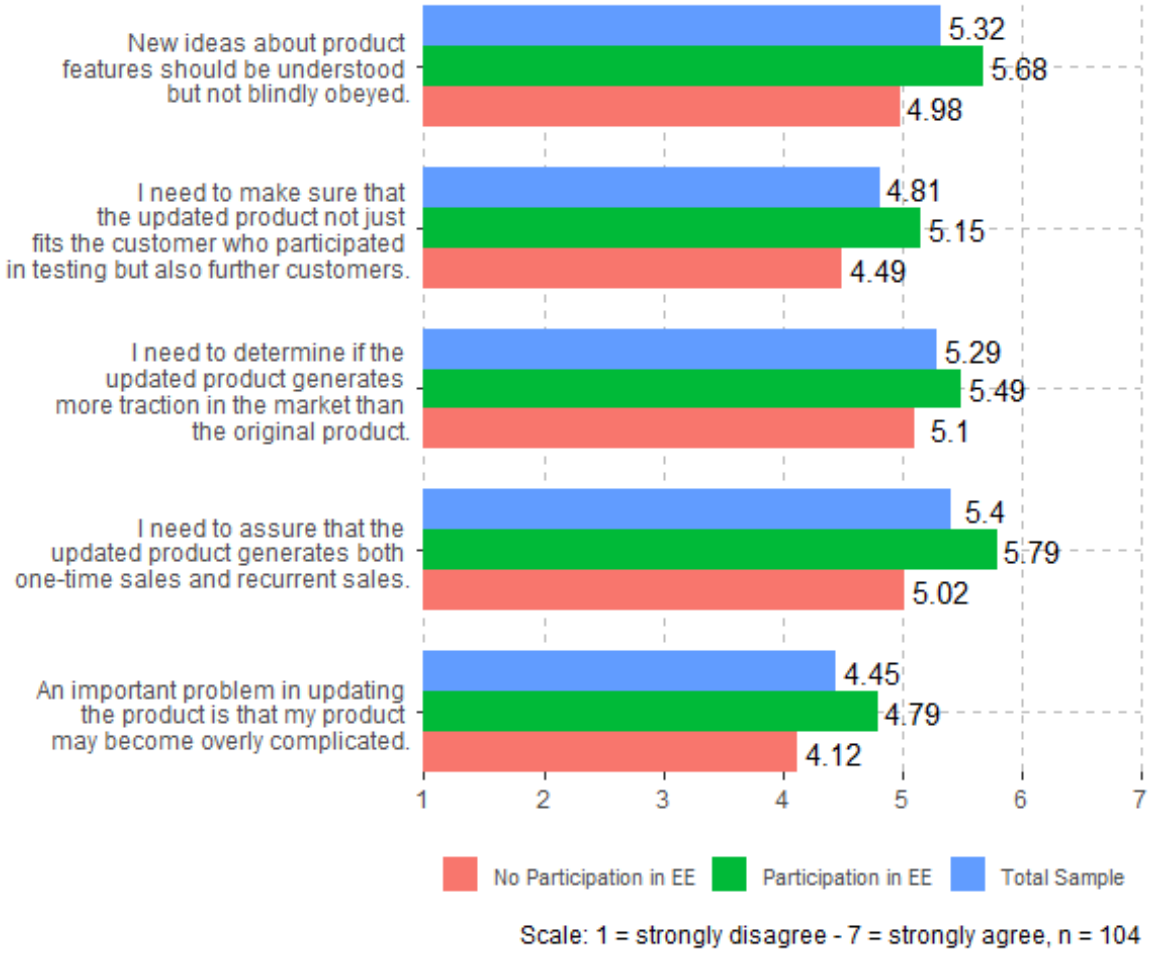
Regarding the knowledge about updating business ideas, our students were asked about their agreement with a number of statements on how they update their business ideas on a 7-point Likert scale. These statements aim at multiple approaches to adopting business ideas. The most agreeable statements among them were “I am open to updating my initial business idea based on new information.” (mean: 5.75), “I need to be open to disconfirming information.” (mean: 5.66) and “I update my business idea with the goal to improve its product-market fit.” (mean: 5.62). The lowest overall agreement was reached at the statement “I rely on objective information on market needs when coming up with a new business idea.” (mean: 4.8). Overall participants in Entrepreneurial Education report higher agreement to every statement made.

Figure 29: Agreement with statements on how to update a business idea



Further statements regarding the about updating business ideas retained a very high level of agreement in the sample. The highest level of support was reached by the statements “I need to assure that the updated product generates both one-time sales and recurrent sales.” (mean: 5.4), “New ideas about product features should be understood but not blindly obeyed.” (mean: 5.32), and “I need to determine if the updated product generates more traction in the market than the original product.” (mean: 5.29). The lowest average agreement was found for the statement “An important problem in updating the product is that my product may become overly complicated.” (mean: 4.45). Again, the level of agreement appears to be higher for participants in Entrepreneurial Education, than non-participants.

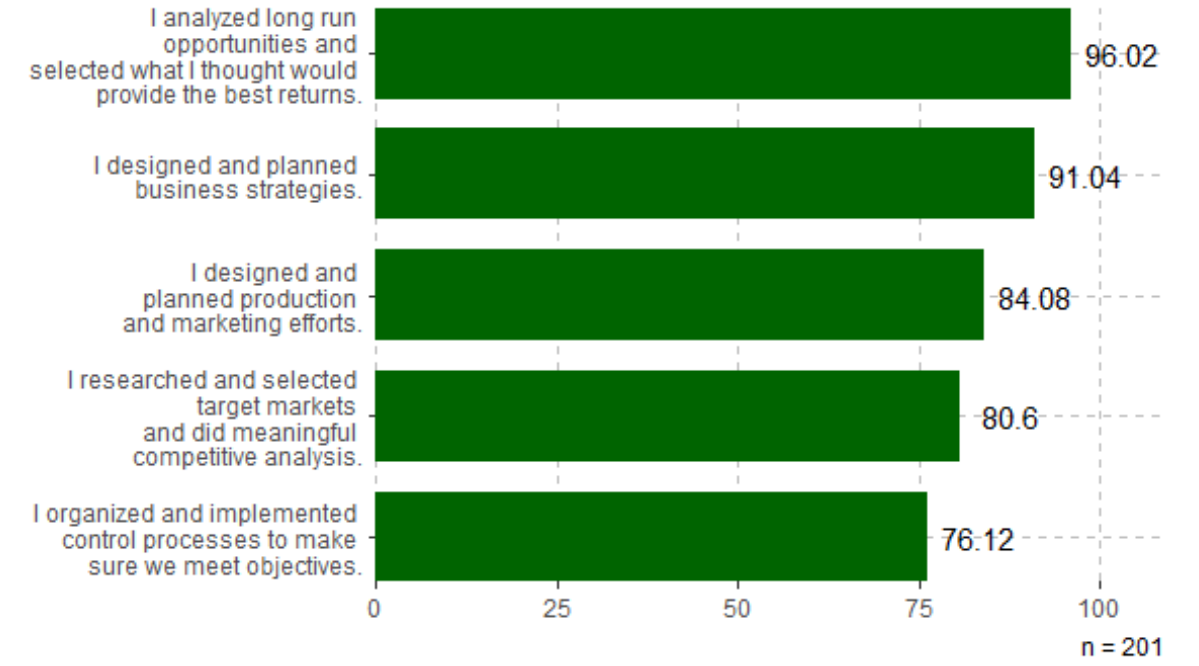
Figure 30: Agreement with statements on how to update a business idea



5.5 Steps taken to found the business

The nascent entrepreneurs were asked about activities concerning starting up their own enterprise. All activities were done by a large majority of the nascent founders, with the statement "I analyzed long run opportunities and selected what I thought would provide the best returns." at the top with 96% and the statement "I organized and implemented control processes to make sure we meet objectives." at the low point with 76% (figure 32).

Figure 31: Steps taken to lay the foundations for their business



6 Active founders

4.8% of the Austrian respondents (110 students) are active founders, i.e. they are already running their own business or are already self-employed.

6.1 Characteristics of active founders

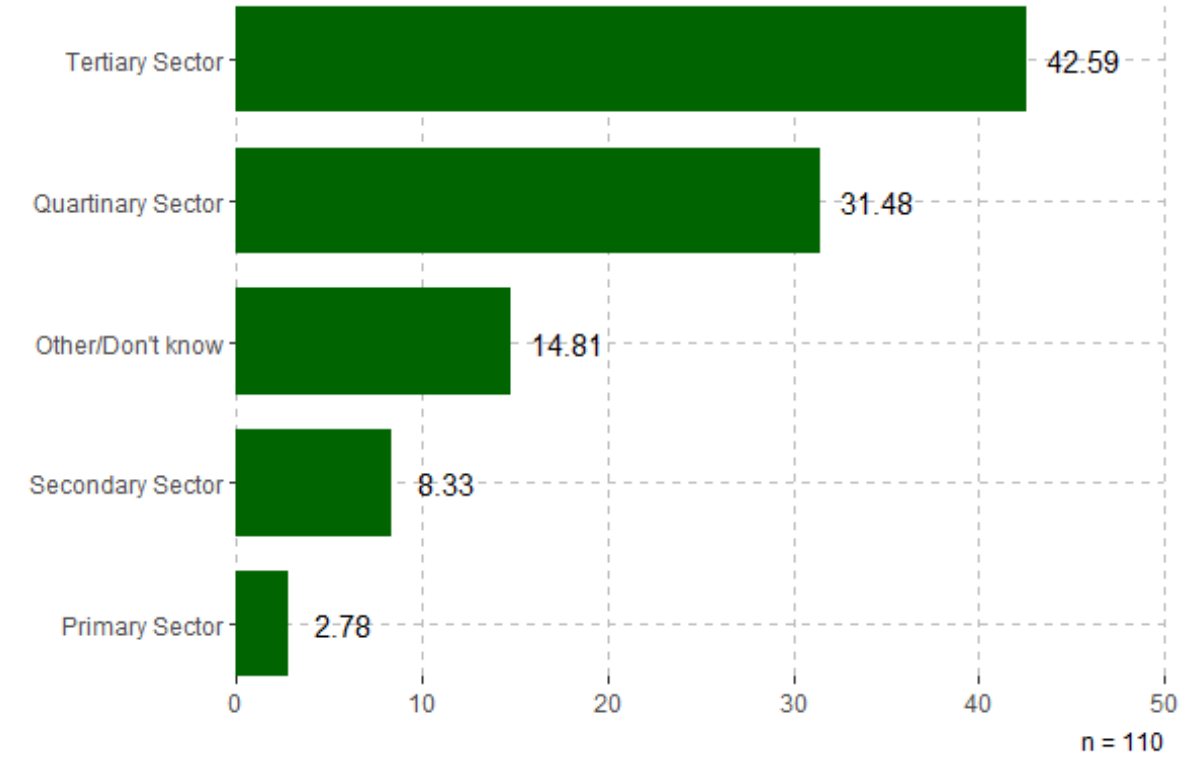
The average active founder in our sample is 31.1 years old. There is a very even split 50 / 50 between men and women in our sample, with a single non-binary person among the active founders. 61% of the active founders are Austrian and about 15% from Germany.

The active founders in the sample stem from a broad array of science fields, led this year by students of the social sciences and the sciences of art (12,7% each) and followed by students of medical fields and humanities (10,0% each) and business, engineering and natural science fields (9,1% each). 45% of the active entrepreneur's intent to remain entrepreneurs right after studies an 44% want to remain entrepreneurs 5 years after that.

6.2 Economic sectors

The nascent founders in this year's sample intent to found their businesses mostly in the tertiary economic sector (43%), followed by the quartinary sector (32%) and people who don't know which sector their business would be situated in (15%) (see figure 33).

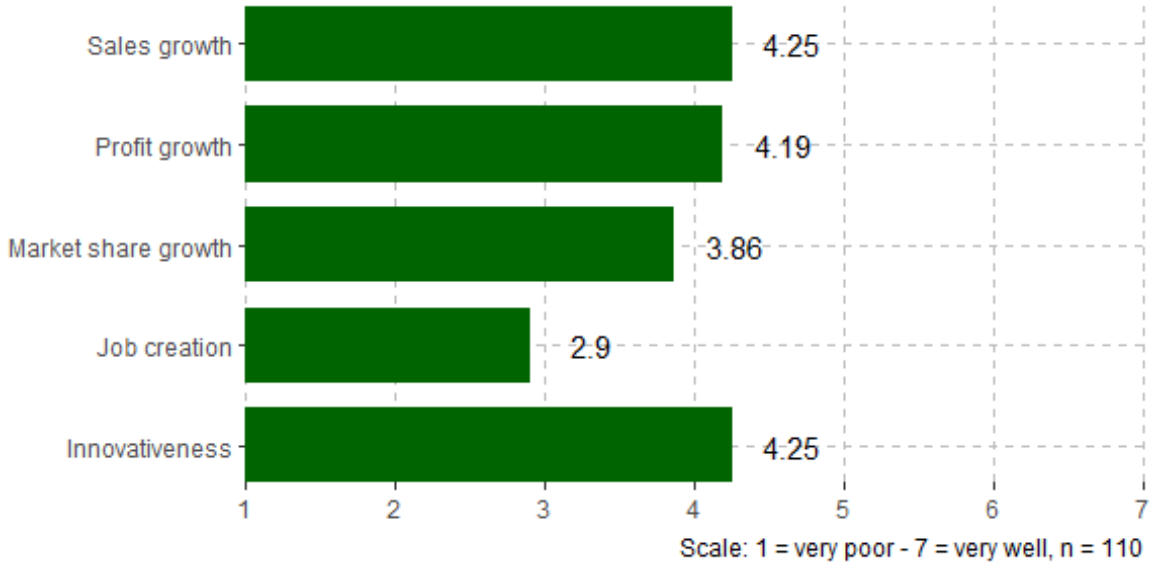
Figure 32: Economic sectors of active founders' businesses



6.3 Performance ratings

The active founders were asked to rate the company's' performance compared to their competitors since its establishment. The highest average level of agreement can be found for "sales growth", "innovativeness" and "profit growth" (mean: 4.19 and higher). Other performance measures like "market share growth" or "job creation" are rated lower, which is plausible in the light of the youth of these companies (figure 34).

Figure 33: Subjective performance ratings compared to competitors



7 Summary of findings

The Global University Entrepreneurial Spirit Students' Survey (GUESSS 2023) is an international online-survey focusing on the entrepreneurial potential and start-up activities of students at universities. The 2023 wave of GUESSS is based on responses from 226.718 students from 57 countries worldwide. The Austrian country study was conducted by the Department of Corporate Leadership and Entrepreneurship at the University of Graz.

2277 students from 40 Austrian universities and universities of applied science filled in the complete online-questionnaire. The average age is 25.6 years. More than the half of the respondents are enrolled in a bachelor program, close to two thirds are female, most of them study in the field of Human Medicine/Health Sciences (26%). 12% are studying Social Sciences, followed by Business sciences (11%) and Natural Sciences (9%).

Main results

- Directly after graduation 42% of students intend to work as employee in a firm (in an SME 23%, in a large enterprise 19%). 17% strive for employment in the public service, 8% in academia & research, 3% in a non-profit organization. 8% intend to begin as entrepreneurs.

- In a 5-year perspective after graduation, however there is a marked shift towards entrepreneurship as career option: 21% of the students want to be self-employed (20% with their own start-up, 1% as business successor).

- Participants in Entrepreneurship Education show a marked higher propensity to become entrepreneurs (7% directly after graduation, five years after graduation 33%). They also rate the entrepreneurial climate at their university significantly more positive than non-participants (3.7 vs. 4.3 on a 7-point Likert scale). Participants also rate their competencies higher than non-participants (for example the ability to discover new business opportunities is rated on average of 4.5 vs. 3.9 on a 7-point Likert scale).

- Students in this year's survey also reported a very positive stance towards state regulatory efforts to address global ecological issues and to increase economic equality.

- 201 students (8.8% of the sample) are currently trying to start their own business ("nascent founders"). They plan to start their own businesses mostly in the quartinary economic sector (37%), followed by the tertiary sector (26%).

- Generally seen the universities activities and courses have a visibly more positive effect on students which are nascent founders.

- Students in this year's survey were tested on their understanding of various aspects of business ideation, idea testing and updating business plans. Participants in Entrepreneurial Education show a higher understanding than non-participants of these three aspects of business generation over all included questions.

- 96% of nascent entrepreneurs state that they have analyzed long run opportunities and selected what they thought would provide the best returns for their business, 81% already

collected information about markets or competitors and 84% started to design and plan production and marketing efforts.

- 55% of nascent entrepreneurs' intent to found their company on their own. 29% intent to found their company with one co-founder.

- 110 students (4.8% of the sample) responding to this study are already self-employed (active entrepreneurs) Their businesses have been founded mainly in the tertiary sector (43%), followed by the quartinary sector (32%).

8 Conclusions and Implications

The Global University Entrepreneurial Spirit Students' Survey (GUESSS) 2023 illustrates an expansive insight into the entrepreneurial ambitions and activities of students across universities in Austria.

Expanding upon the findings from the last years prior, GUESSS 2023 underscores a marked entrepreneurial intent among students, showing not only their aspirations towards starting up and business succession but also highlighting the activities of those already navigation the entrepreneurial journey as founders or business successors. This continued entrepreneurial tendency provides fertile ground for the further expansion of support structures and educational programs designed to foster this entrepreneurial spirit.

Promoting entrepreneurial intentions and education

The continued entrepreneurial ambitions highlighted in GUESSS 2023 underline the need for a comprehensive approach to entrepreneurship education. Similarly, to last years' results, the survey emphasizes the significant role of Entrepreneurship Education (EE) in strengthening students' entrepreneurial intentions and competencies. This positive correlation between EE and entrepreneurial propensity calls for an expanded academic curriculum that integrates practical, hands-on entrepreneurial experiences with theoretical knowledge. Initiatives such as the TIMEGATE program at the University of Graz and the inter-university cooperation exemplified by the Gründungsgarage in Styria serve as commendable models for fostering an entrepreneurial mindset and providing tangible support to nascent entrepreneurs. In recent years, an entrepreneurial mindset has become crucial for companies. Employees are now expected to think beyond their traditional roles, showing initiative and adopting entrepreneurial perspectives. This shift towards intrapreneurship is essential for Austrian companies' success.

The role of universities in promoting entrepreneurial talent

The survey's findings highlight the central role of universities in shaping the entrepreneurial landscape. By offering practice-oriented lectures, facilitating interactions with role models, and providing access to entrepreneurial ecosystems, universities can significantly enhance students' readiness and enthusiasm for entrepreneurial endeavors (Volkmann, Audresch 2021). The incorporation of extracurricular activities, such as business plan competitions and internships in start-ups, alongside academic programs can further enrich the entrepreneurial education

experience, preparing students for the multifaceted challenges of starting and running a business. Furthermore, foster an intrapreneurship mindset for future employees in innovative companies.

Support Infrastructure for nascent entrepreneurs

Recognizing the diverse needs of nascent entrepreneurs, the survey underscores the importance of a tailored support infrastructure. Specialized services and resources, such as incubators, co-working spaces, and access to venture capital funds, play a crucial role in facilitating the transition from idea to implementation. For students looking to embark on entrepreneurial ventures before graduation, these support mechanisms can provide the guidance and resources needed to support their entrepreneurial ambitions.

Strategic support for entrepreneurship after graduation

The survey also identifies a significant group of students inclined towards entrepreneurship post-graduation, after acquiring practical knowledge and industry-specific insights. For this group, leveraging alumni networks and fostering collaborations between alumni and academic departments can offer significant benefits. By facilitating knowledge transfer and access to industry experts, universities can extend their support beyond the campus and help graduates to navigate the entrepreneurial landscape with confidence and competence.

Entrepreneurship and career dynamics

The evolving career dynamics, where individuals increasingly move back and forth between entrepreneurial ventures and employment in larger companies (Kailer, Hora 2017; Hora et al. 2018), suggest a need for programs that address topics such as intrapreneurship and enterprise cooperation. The survey's insights into the fluid nature of entrepreneurial careers advocate for an educational focus that prepares students for a spectrum of professional careers, enabling them to adapt and thrive in diverse entrepreneurial and intrapreneurial roles. Recent studies such as Donald F. et. al. (2023) highlights the growing importance of an entrepreneurial mindset within companies. Therefore, this should play a critical role in the education of students, underscoring the necessity to embed entrepreneurial thinking in academic curricula to prepare future professionals for corporate innovation and success.

In conclusion, GUESSS 2023 reinforces the critical role of Entrepreneurship Education and university support systems in fostering the entrepreneurial potential of students. By building on the findings and recommendations of the prior GUESSS surveys, and adapting to the evolving entrepreneurial landscape, there is an opportunity to further advance the promotion of entrepreneurial spirit among students. This entails not only the continuation but also the expansion of initiatives aimed at integrating entrepreneurial thinking and skills into the fabric of university education and beyond, fostering an environment where entrepreneurial aspirations can develop into tangible outcomes.

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