Questionnaire for students

**Questionnaire on sustainable entrepreneurship:
intentions and competences**

Labels used in this report

- APRO IT   APRO (Italy)
- BBS DE   BBS Nienburg (Germany)
- GENT BE   Hogeschool Gent (Belgium)
- GENCAT   General Direction for VET and Specialized Studies, Regional Government of Education of the Government of Catalonia, CATALONIA (Spain)
- RocFP NE   Roc Friese Poort (Netherlands)
- WSX UK   WSX Enterprise (UK)
- Kurikka FI   Kurikka high school (Finland)
- SeAMK FI   Seinäjoki University of Applied Sciences (Finland)
- SEDU FI   Vocational Education and Training Institute Sedu (Finland)

Research material

Students data was collect in 12/2019 – 1/2020

Educational institution	Respondents
GENT BE	192
GENCAT	110
WSX UK	45
BBS DE	46
APRO IT	50
RocFP NE	39
SeAMK FI	294
SEDU FI	311
Kurikka FI	41
Total	**1128**

Field of study	Frequency	Valid Percent
Humanities and Education	23	2
Culture	70	6
Natural Sciences	102	9
Natural Sources and the Environment	94	8
Tourism, Catering and Domestic Services	76	7
Social Services, Health and Sports	77	7
Technology, Communications and Transport	355	31
Social Sciences, Business and Administration	185	16
Not applicable	146	13
Total	**1128**	**100**

Year of study	Valid Percent
1.	33
2.	41
3.	16
4.	7
Other	3
Total	**100**

Background Information

Background variables include gender, age, entrepreneurial role model, previous and current experience.
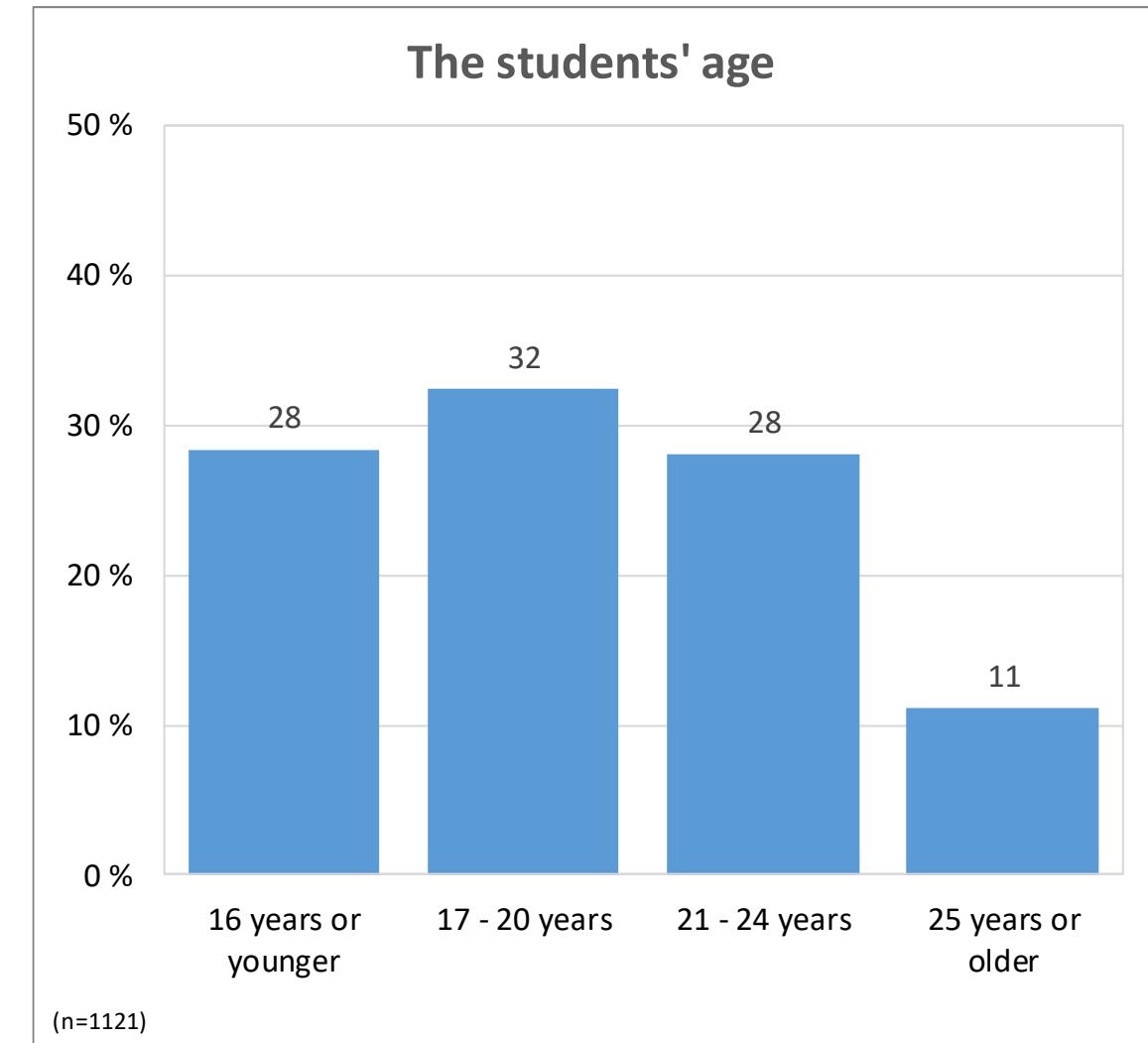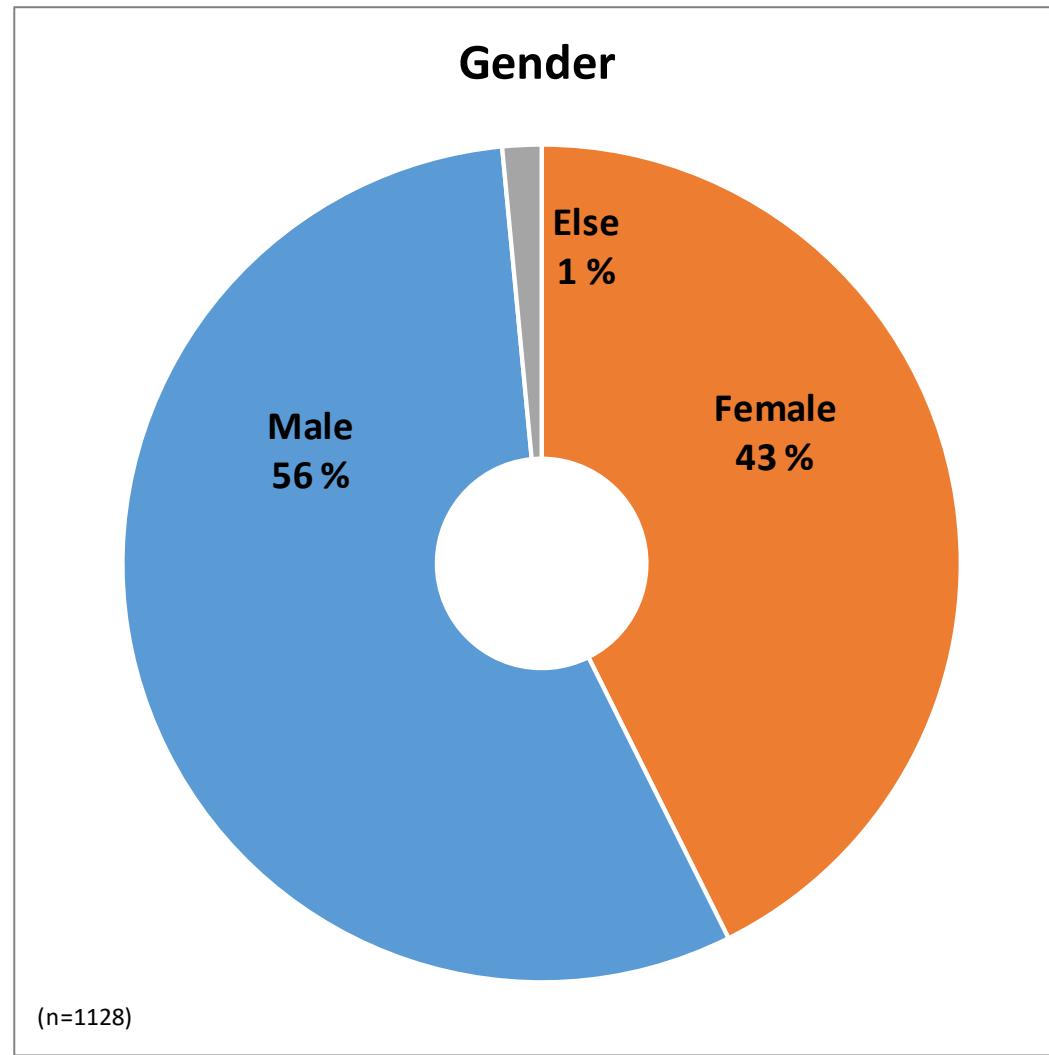
| Educational institution	The students' age (years)					n
	Mean	Std. Deviation	Minimum age	Median age	Maximum age	
SeAMK FI	24,2	5,3	19	22	57	294
WSX UK	23,5	12,5	16	18	63	45
GENCAT	22,0	5,5	17	20	47	108
GENT BE	20,8	1,8	18	20	31	191
All students	**20,2**	**5,4**	**15**	**19**	**63**	**1121**
BBS DE	20,1	5,6	17	19	50	46
RocFP NE	17,2	1,1	16	17	21	39
SEDU FI	16,6	1,9	16	16	40	307
APRO IT	16,5	1,3	15	16	20	50
Kurikka FI	16,0	0,3	16	16	18	41

Previous and current experience

Have you attended an entrepreneurship-related course or training before your current studies?
- Yes: 28
- No: 72

Have you started your own business before?
- Yes: 7
- No: 93
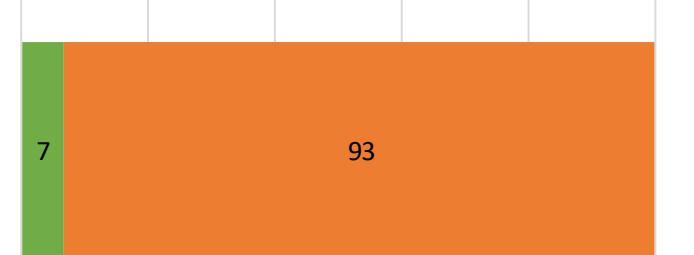
Are you currently starting your own business?
- Yes: 13
- No: 87
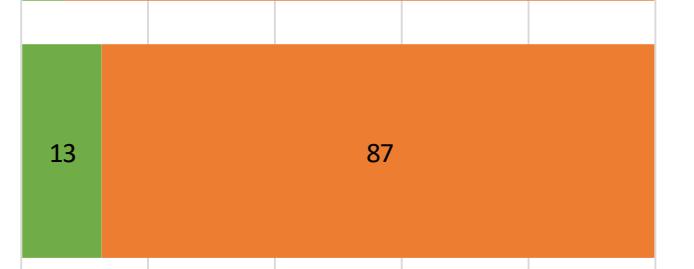
■ Yes ■ No

(n=1128)

Entrepreneurial role models

Have some of your closest people (parents, sisters, friends) worked as an entrepreneur?
- Yes: 64
- No: 36

Has your father worked as an entrepreneur during his work career (part-time included)?
- Yes: 41
- No: 59

Has your mother worked as an entrepreneur during her work career (part-time included)?
- Yes: 23
- No: 77

■ Yes ■ No

(n=1128)

SUSTAINABILITY driven ENTREPRENEURSHIP
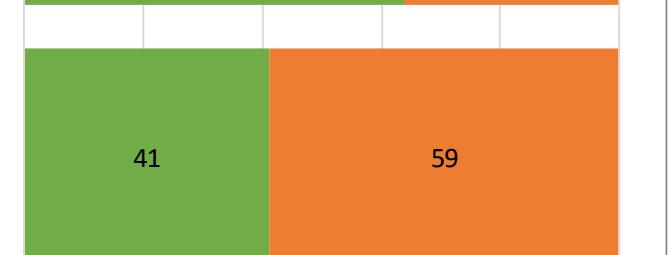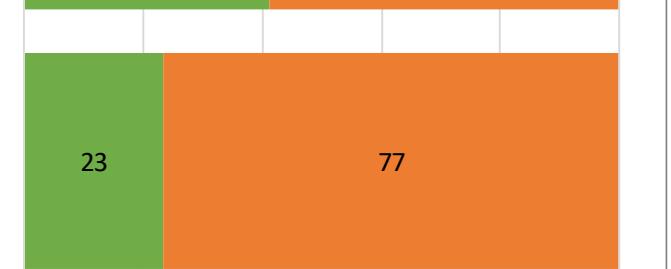
# Have you attended an entrepreneurship-related course of training before your current studies?
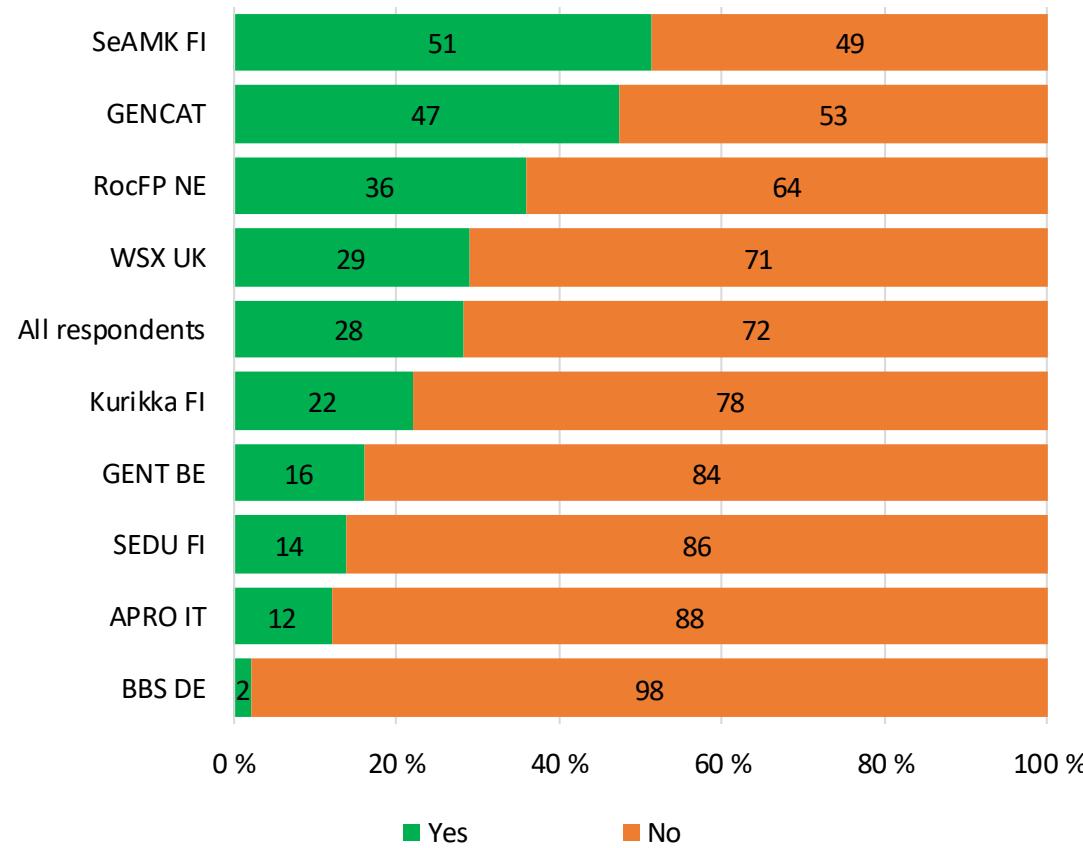
Educational institution	Have you attended an entrepreneurship-related course of training before your current studies?	
	Yes	No
	Count	Count
SeAMK FI	151	143
GENCAT	52	58
SEDU FI	43	268
GENT BE	31	161
RocFP NE	14	25
WSX UK	13	32
Kurikka FI	9	32
APRO IT	6	44
BBS DE	1	45
All respondents	**320**	**808**

Have you started your own business before?

WSX UK	13	87
GENCAT	11	89
SeAMK FI	8	92
All respondents	7	93
GENT BE	6	94
APRO IT	6	94
SEDU FI	5	95
RocFP NE	5	95
BBS DE	2	98
Kurikka FI	0	100
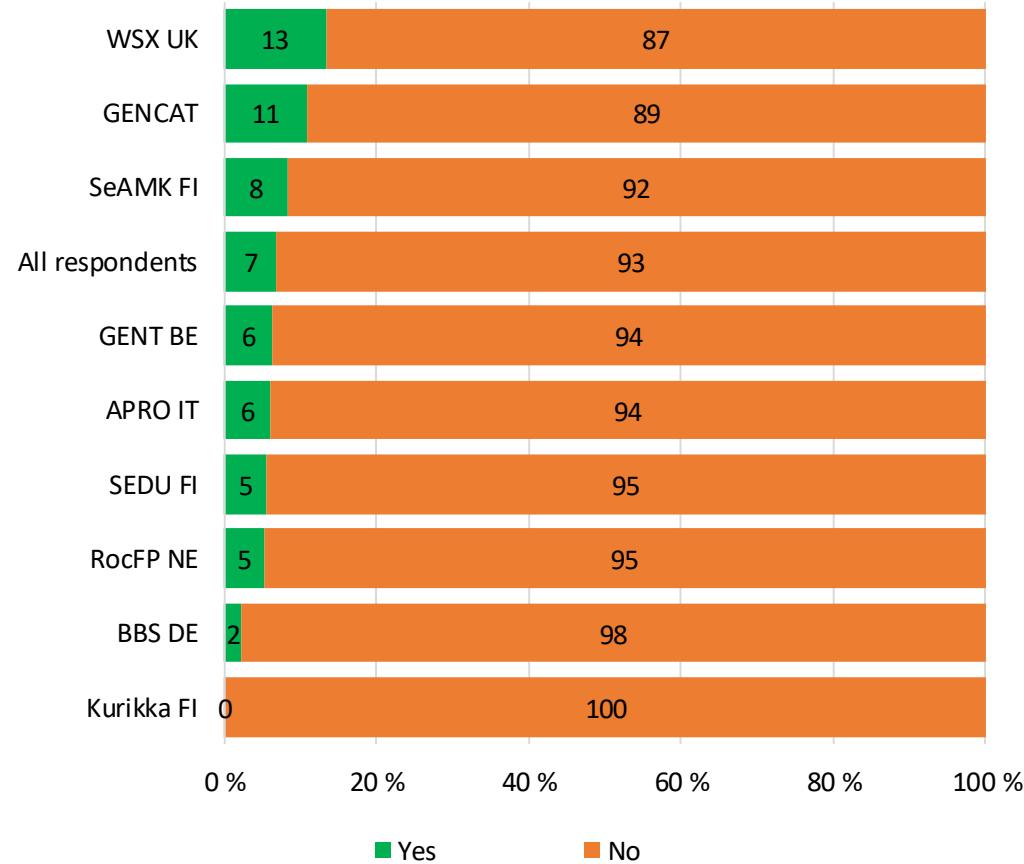
■ Yes ■ No

Educational institution	Have you started your own business before?	
	Yes	No
	Count	Count
SeAMK FI	24	270
SEDU FI	17	294
GENT BE	12	180
GENCAT	12	98
WSX UK	6	39
APRO IT	3	47
RocFP NE	2	37
BBS DE	1	45
Kurikka FI	0	41
All respondents	**77**	**1051**

Are you currently starting your own business?

WSX UK	Yes: 42	No: 58
APRO IT	28	72
GENCAT	21	79
RocFP NE	15	85
All respondents	13	87
SeAMK FI	12	88
GENT BE	11	89
Kurikka FI	10	90
SEDU FI	6	94
BBS DE	0	100
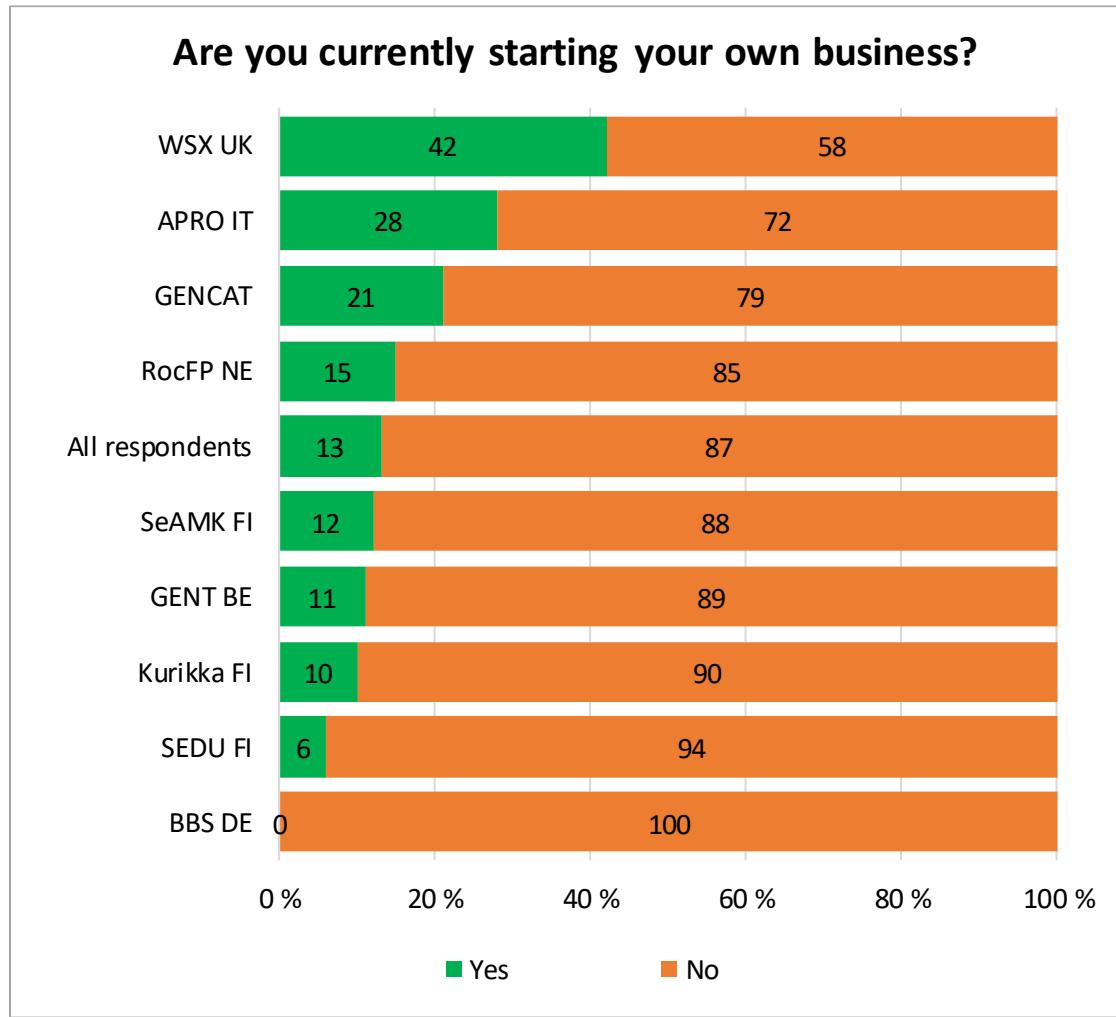
■ Yes   ■ No

Educational institution	Are you currently starting your own business?	
	Yes	No
	Count	Count
SeAMK FI	35	259
GENCAT	23	87
GENT BE	21	171
SEDU FI	20	291
WSX UK	19	26
APRO IT	14	36
RocFP NE	6	33
Kurikka FI	4	37
BBS DE	0	46
All respondents	**142**	**986**

(E.g. you are working on a business idea or other plans or finding out about different things in order to establish an enterprise)

Have some of your closest people (parents, sisters, friends) worked as an entrepreneur?
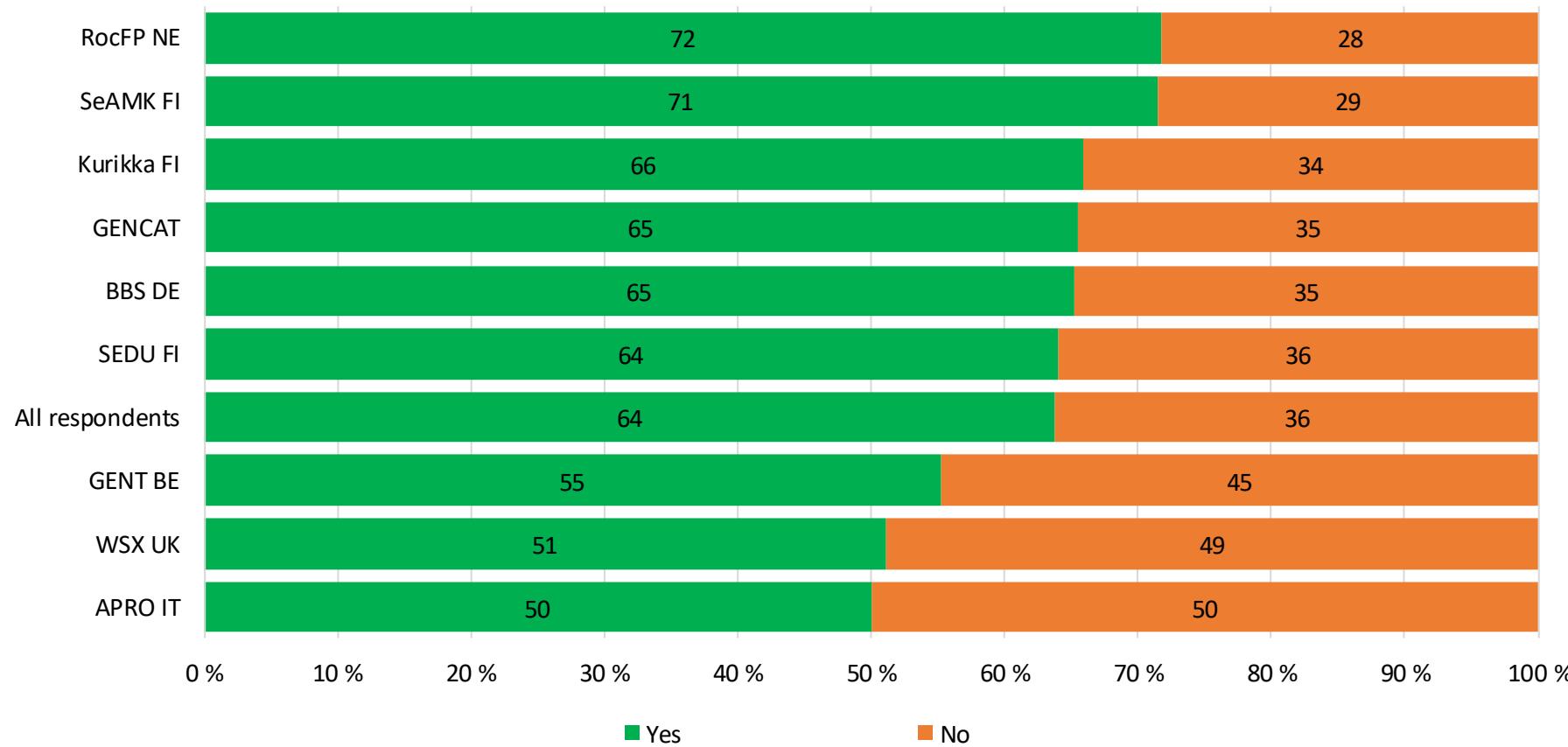
	Yes	No
RocFP NE	72	28
SeAMK FI	71	29
Kurikka FI	66	34
GENCAT	65	35
BBS DE	65	35
SEDU FI	64	36
All respondents	64	36
GENT BE	55	45
WSX UK	51	49
APRO IT	50	50

Has your father worked as an entrepreneur during his work career (part-time included)?

	Yes	No
RocFP NE	67	33
SeAMK FI	46	54
SEDU FI	43	57
GENCAT	43	57
All respondents	41	59
Kurikka FI	39	61
APRO IT	34	66
GENT BE	33	67
BBS DE	30	70
WSX UK	24	76

Has your mother worked as an entrepreneur during his work career (part-time included)?

	Yes	No
RocFP NE	33	67
GENCAT	29	71
SeAMK FI	28	72
All respondents	23	77
APRO IT	22	78
SEDU FI	22	78
GENT BE	20	80
WSX UK	16	84
Kurikka FI	15	85
BBS DE	13	87
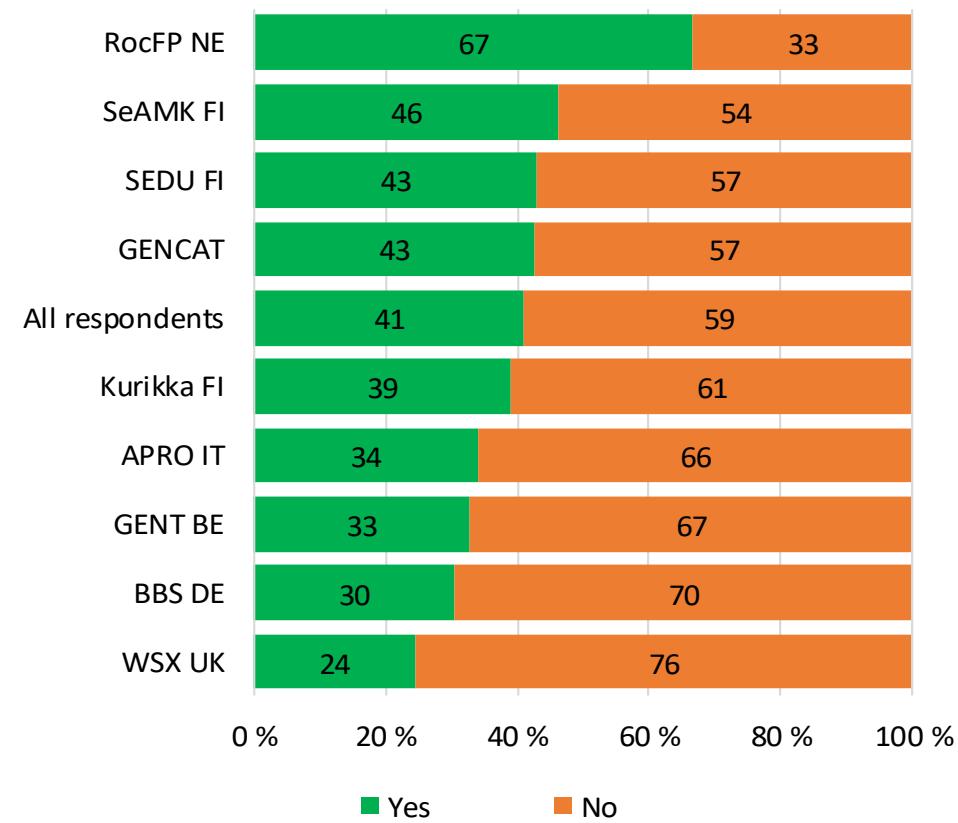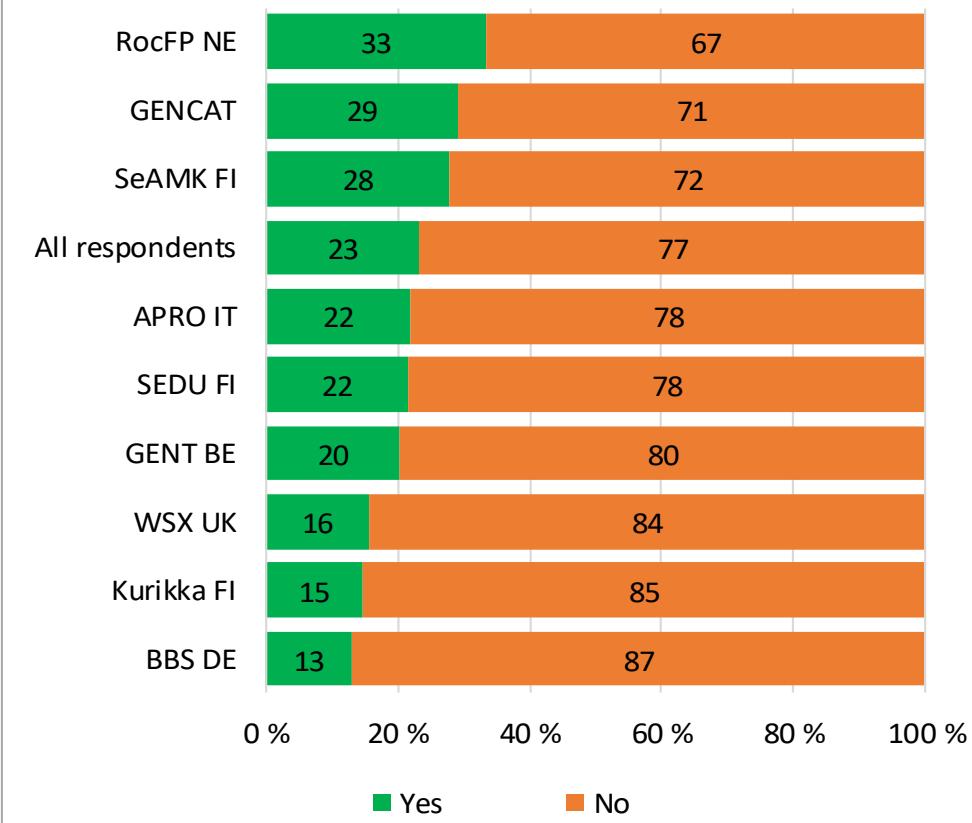
Data processing

- The questionnaire included some questiong about respondents background and about 70 questions measuring opinions of entrepreneurship

- Questions or data variables have summarized to 14 sum variables

- Each of those 14 variables have good Cronbachs' alpha varying between 0,671 – 0,958

- All variables including sum variable are measuring same named thing

Cronbach alphas (α) indicates the ability of all questions including sum variable measuring same thing, i.e. how the questions are consistent with each other. It is usually said that alphas below 0,60 should not be accepted.

The difference in the means (p) is significant statistically between different groups if it is p ≤ 0,05.

Entrepreneurial Intentions

- According to the Theory of Planned Behavior (TPB) intention is a key predictor of behavior. Intention to become an entrepreneur is viewed as a predictor of becoming an entrepreneur. The strength of TPB in study of entrepreneurial intention lies in its conception of antecedents of intention, i.e. the factors that influence intention. According to Ajzen (1991) there are three conceptually distinct determinants to intention; attitude to behavior in question, subjective norm i.e. perceived social pressure relating to the behavior and perceived behavioral control, i.e. the perception of whether the behavior of interest is easy or difficult. Perceived behavioral control has also been known as self-efficacy (see e.g. Wood and Bandura, 1989).

- To summarize, intention to behave in specific way is formed when a person has a favorable attitude to said behavior, experiences positive social pressure, or at least the lack of negative social pressure, towards the behavior and perceives the behavior as something he or she can accomplish. Previous studies have largely validated the utility of TPB in the context of entrepreneurial intention.

Entrepreneurial Intentions

Sum variables:

- Entrepreneurial Intentions α = 0,802
- Subjective Norm   α = 0,766
- Perceived Behavioral Control   α = 0,671
- Attitudes   α = 0,792

Subjective norm, Perceived behavioral control and attitudes towards entrepreneurship are significant in the coming true of entrepreneurial intentions.

Cronbach alphas (α) indicates the ability of all questions including sum variable measuring same thing, i.e. how the questions are consistent with each other. It is usually said that alphas below 0,60 should not be accepted.

The difference in the means (p) is significant statistically between different groups if it is p ≤ 0,05.

Entrepreneurial Intentions α = 0,802

- How likely are you to continue your career employed by another (i.e. in salaried work) after graduation)? (Scale recoded)

- How likely are you to start your own business and work as an entrepreneur after graduation (or while still studying)?

- If you had to choose between entrepreneurship and salaried work after graduation, which one would you choose?

- How likely is it that you will be employed for most of your career by a company or public organization (without any connection to entrepreneurship)? (Scale recoded)

- How strong is your intention to embark on entrepreneurship at some point of your professional career?

- If you had to choose between entrepreneurship and unemployment after graduation, which one would you choose?

- How likely are you to end up as an entrepreneur through succession or transfer of ownership after graduation (or while still studying)?

- How likely are you to embark on entrepreneurship after you have gathered a sufficient amount of work experience?

Scale 1-7
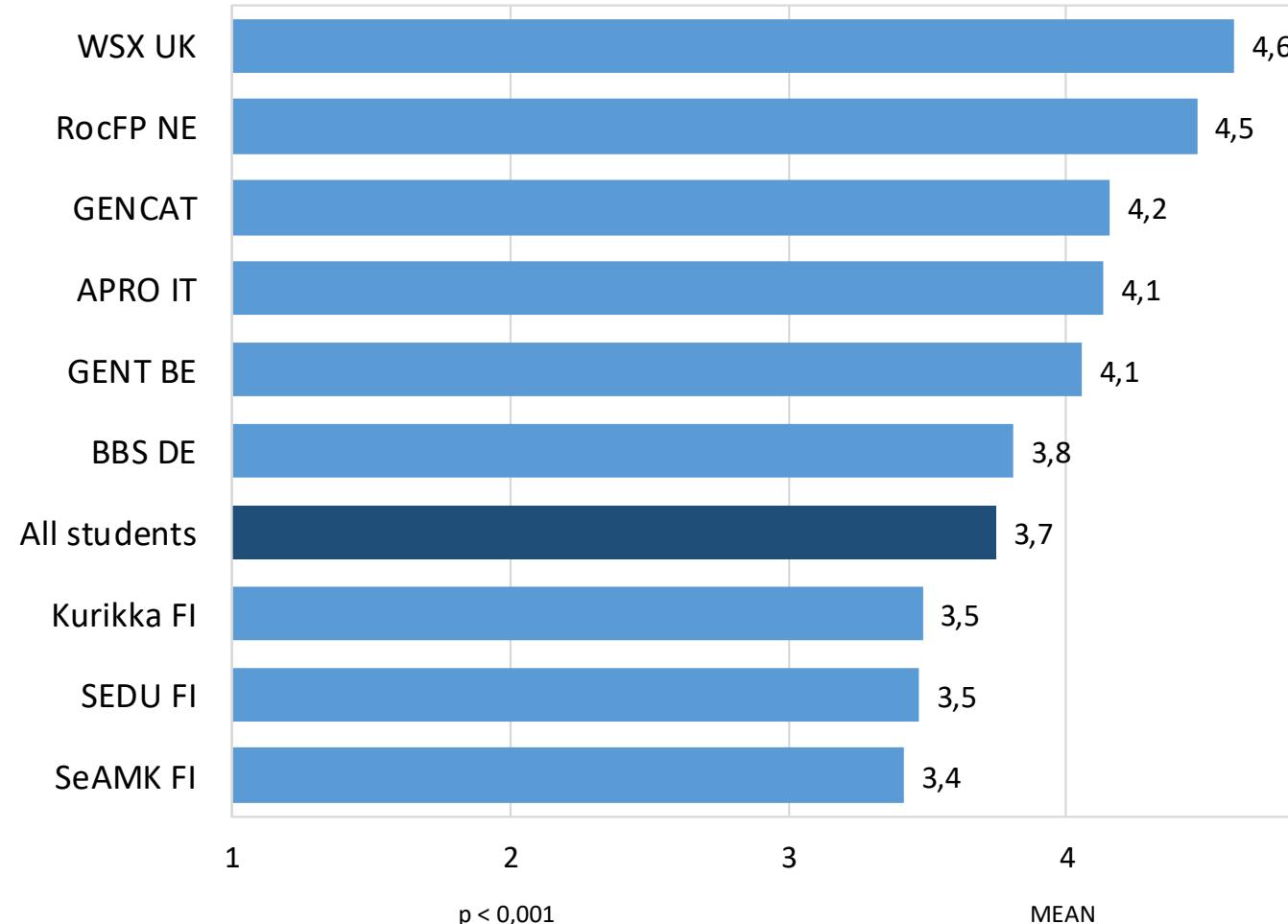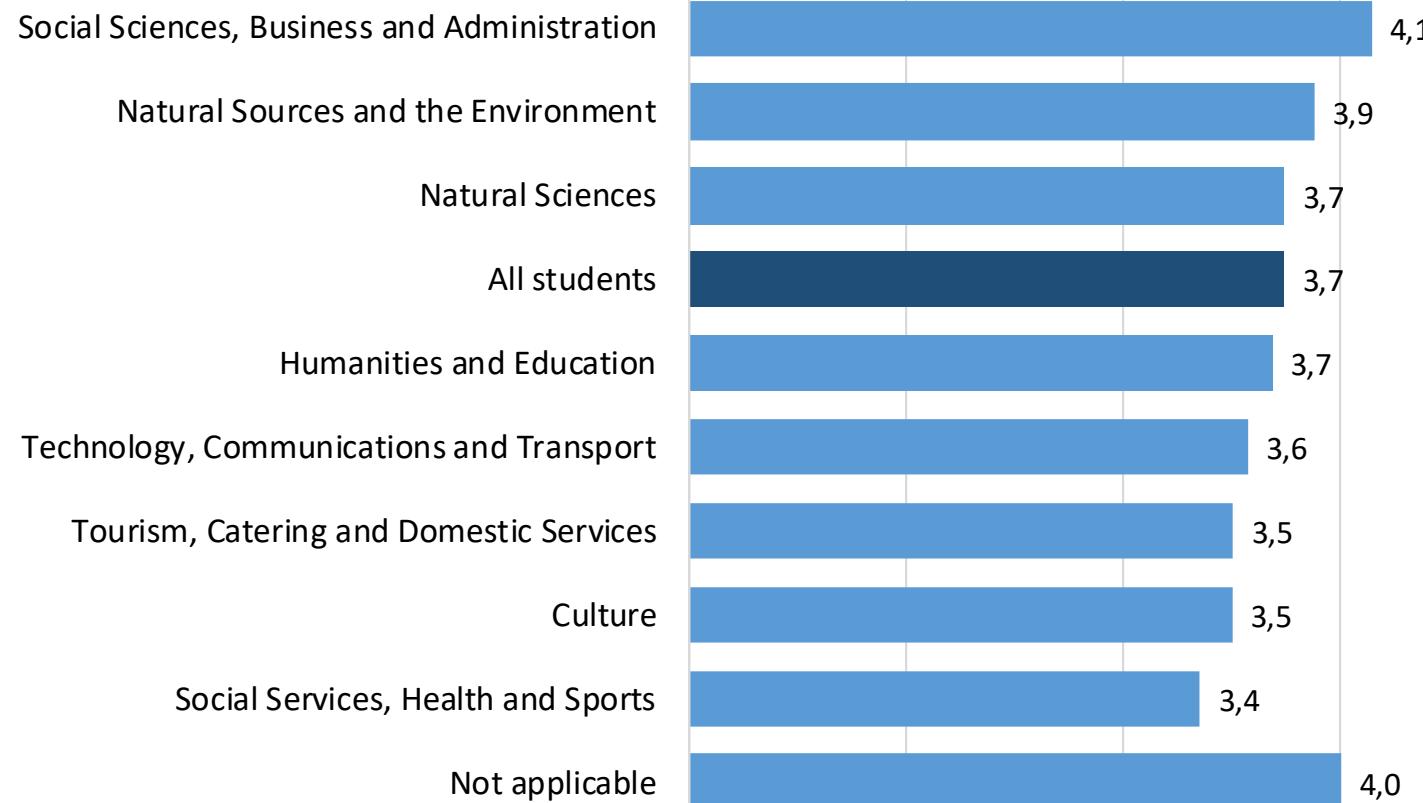
Subjective Norm α = 0,766

- I believe that my closest family members think I should not ... should strive to start my own business and to work as an entrepreneur after graduation.

- How much attention do you pay to what your closest family members think if you strive to start your own business and to work as an entrepreneur after graduation?

- I believe that my best friends think I should not ... should strive to start my own business and to work as an entrepreneur after graduation.

- How much attention do you pay to what your best friends think if you strive to start your own business and to work as an entrepreneur after graduation?

- I believe that my significant others think I should not ... should strive to start my own business and to work as an entrepreneur after graduation.

- How much attention do you pay to what your significant others think if you strive to start your own business and to work as an entrepreneur after graduation?

Scale   -63 ... +63

Subjective Norm
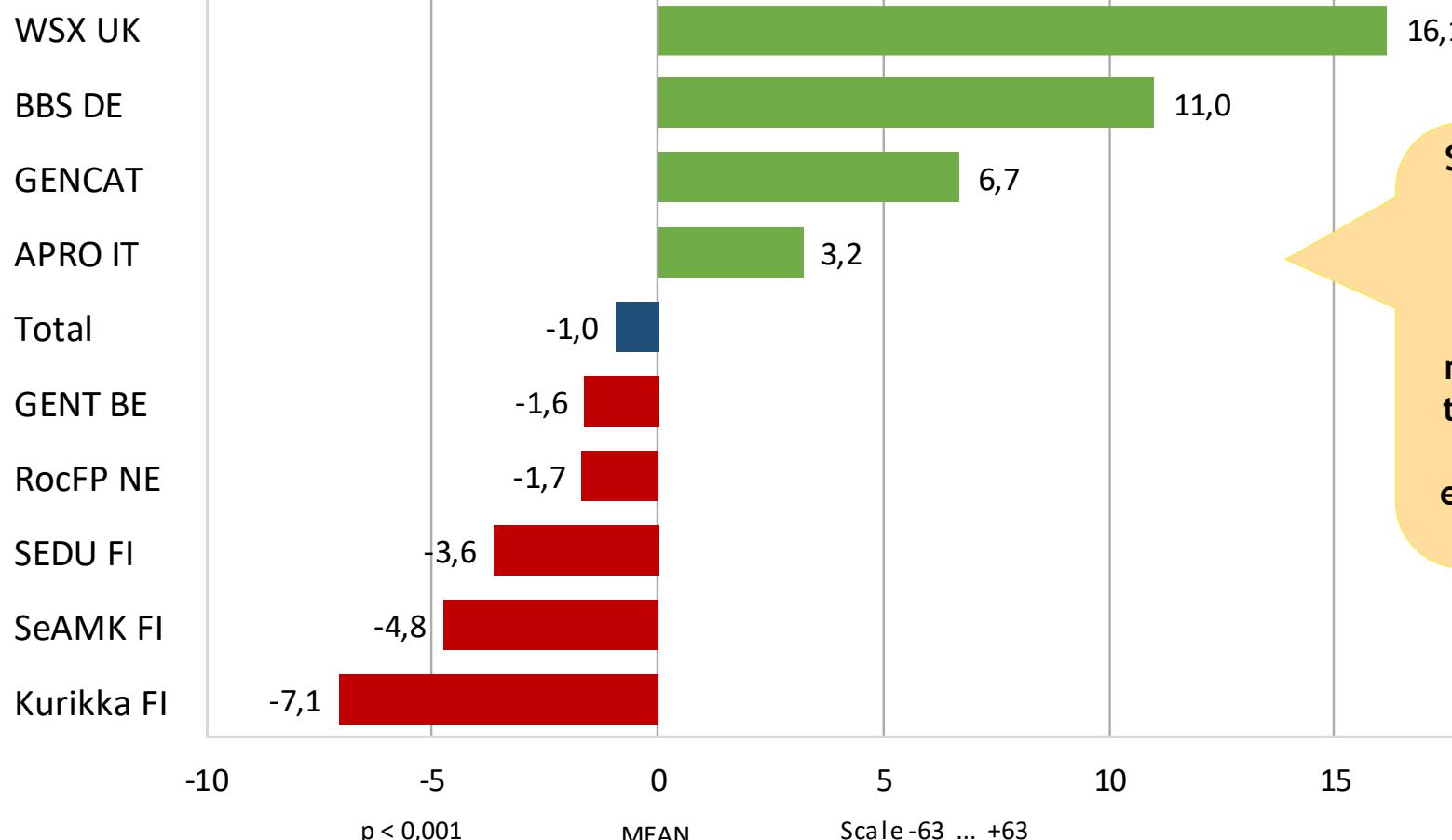
Field	Value
Humanities and Education	12,0
Social Sciences, Business and Administration	6,1
Social Services, Health and Sports	2,8
All students	-1,0
Natural Sources and the Environment	-1,3
Natural Sciences	-2,5
Tourism, Catering and Domestic Services	-4,1
Technology, Communications and Transport	-4,3
Culture	-6,2
Not applicable	-0,2

$p < 0,001$ MEAN Scale -63 … +63

SUSTAINABILITY driven ENTREPRENEURSHIP
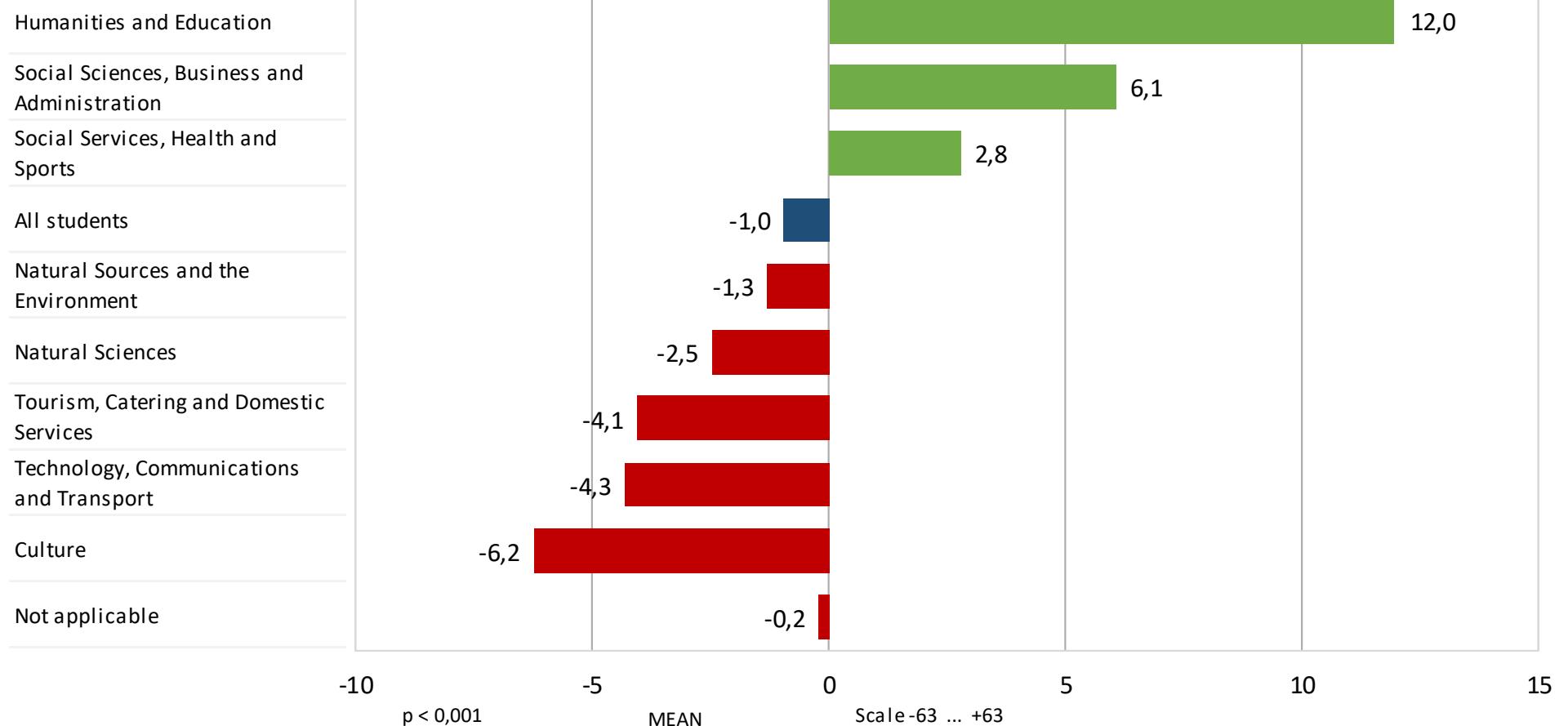
Perceived Behavioral Control α = 0,671

- If I established a business and started to work as an entrepreneur after graduation, my chance of success would be very slim ... very good
- If I really wanted to, I could easily start a business and work as an entrepreneur after graduation.
- There are very few ... numerous things that are beyond my own control but could prevent me from starting my own business and working as an entrepreneur after graduation. (Scale recoded)
- For me, starting my own business and working as an entrepreneur after graduation would be very easy ... very difficult. (Scale recoded)
- If I established my own business and started to work as an entrepreneur after graduation, my risk of failure would be very small ... very big. (Scale recoded)

Scale 1-7
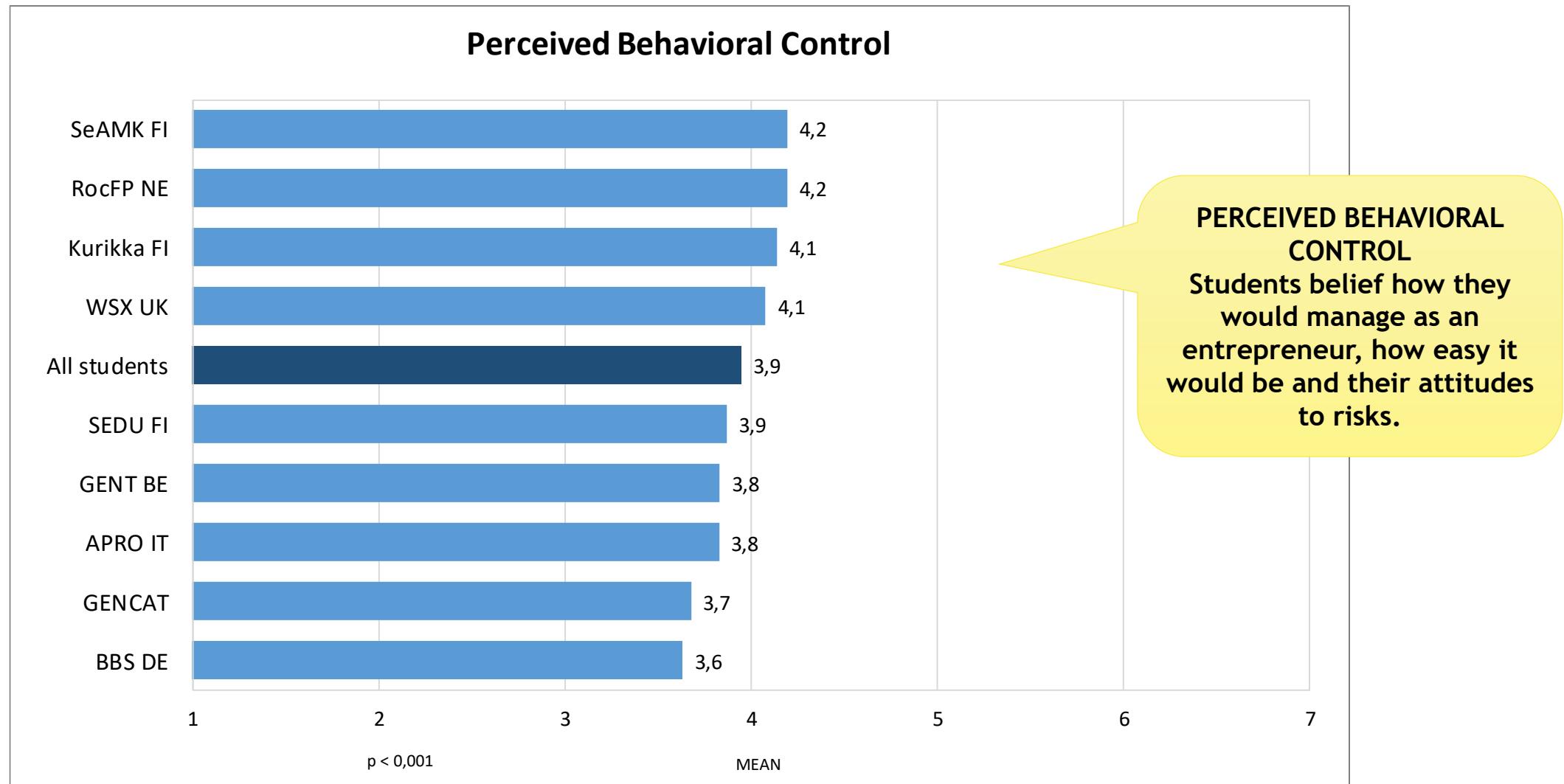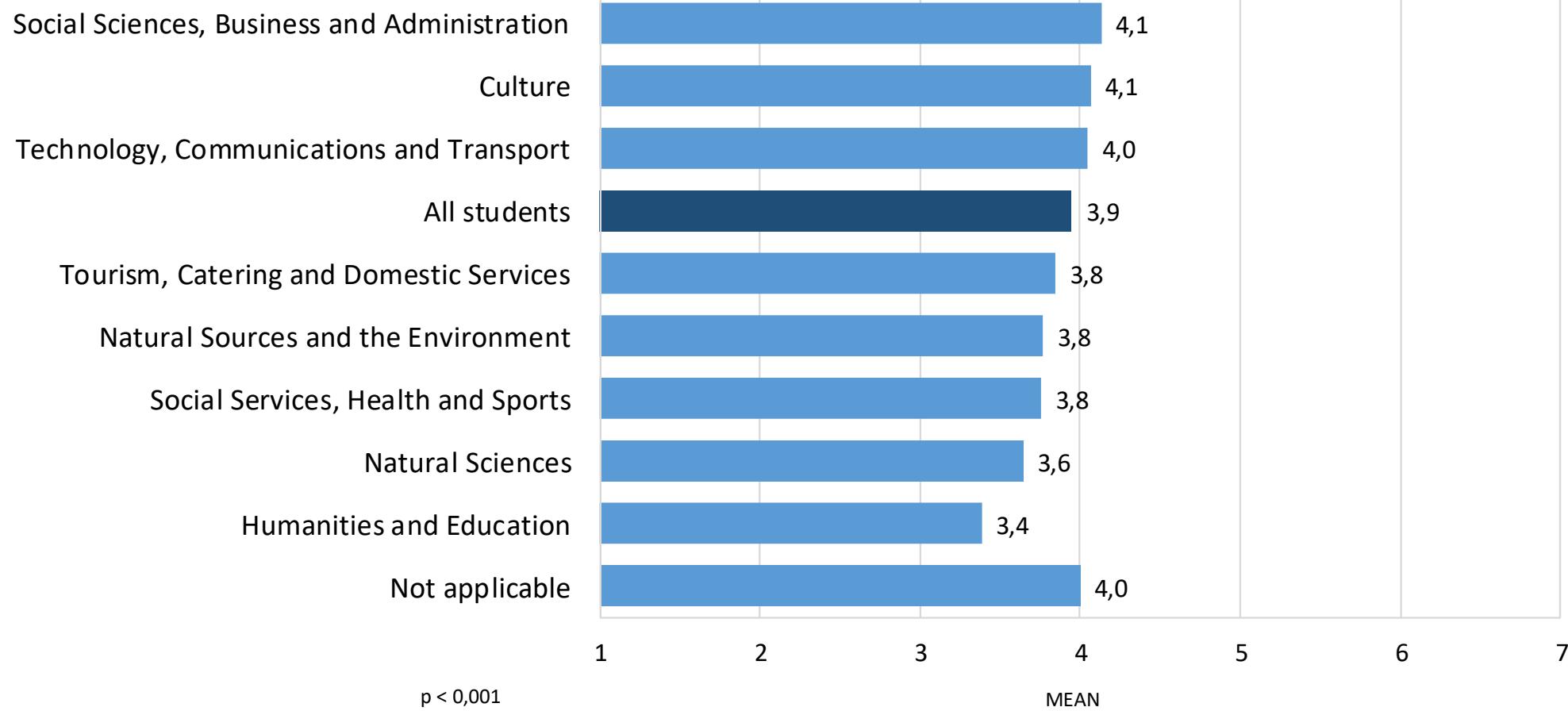
Attitudes α = 0,792

To what extent do the following attributes correspond to your perceptions of entrepreneurship (i.e. establishing a business and working as an entrepreneur)?
- Interesting
- Esteemed
- Dishonest (Scale recoded)
- Worth pursuing
- Boring (Scale recoded)
- Fascinating
- Despised (Scale recoded)
- Good income level
- Oppressive (Scale recoded)

Scale 1-7
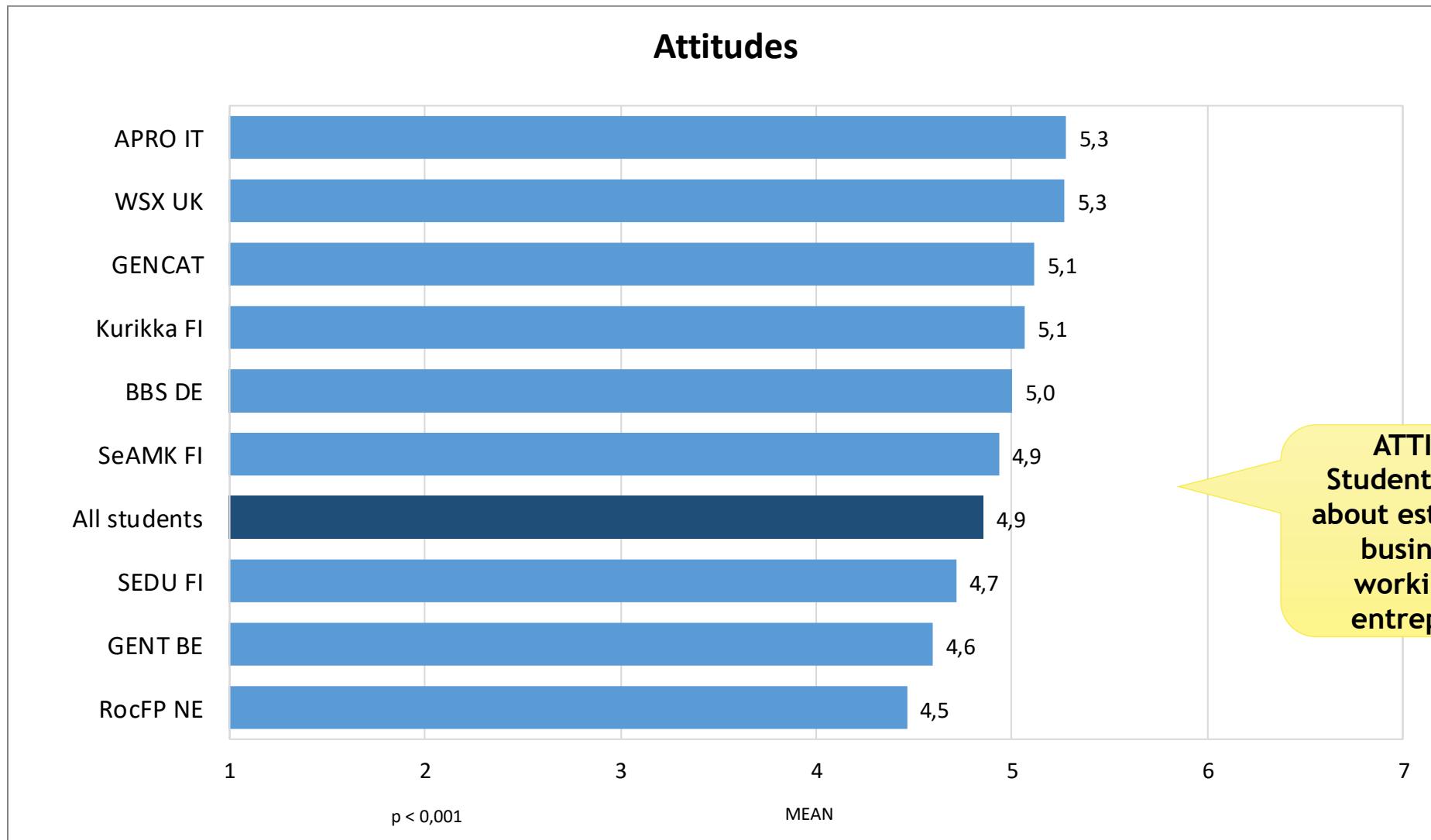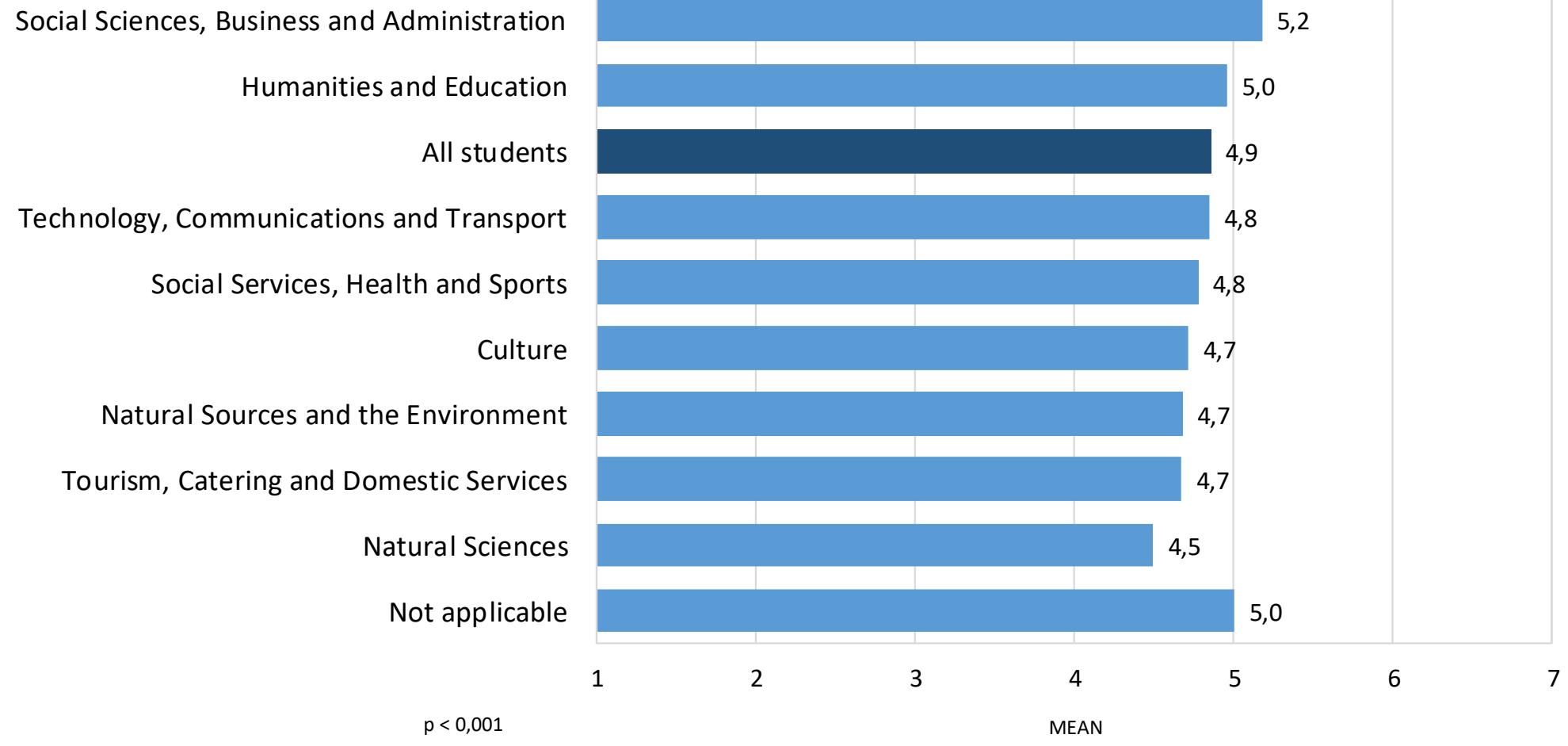
Attitudes

Category	Mean
Social Sciences, Business and Administration	5,2
Humanities and Education	5,0
All students	4,9
Technology, Communications and Transport	4,8
Social Services, Health and Sports	4,8
Culture	4,7
Natural Sources and the Environment	4,7
Tourism, Catering and Domestic Services	4,7
Natural Sciences	4,5
Not applicable	5,0

p < 0,001

MEAN

SUSTAINABILITY driven ENTREPRENEURSHIP

	All students	Student of the		
		1. year	2. year	3. + year
	Mean	Mean	Mean	Mean
Entrepreneurial intentions	**3,7**	3,8	3,7	3,7
Subjective norm	**-1,0**	-1,0	-1,1	-0,7
Perceived behavioral control	**3,9**	3,9	4,0	4,0
Attitudes	**4,9**	4,9	4,8	4,9

There is no significant difference in means between different years.

Entrepreneurial Intentions	All respondents	Gender		p
		Female	Male	
	Mean	Mean	Mean	
Subjective Norm	-1,0	1,0	-2,8	0,000
Perceived Behavioral Control	3,9	3,8	4,1	0,000
Attitudes	4,9	4,8	4,9	0,046

The difference in the means is significant statistically between females and males (p ≤ 0,05).

Males don't think their family and friends think they should become an entrepreneur.
Males have more faith in themselves to have success as an entrepreneur.
Their attitudes towards entrepreneurship are better.

Entrepreneurial Intentions	All respondents	The students' age				p
		16 years or younger	17 - 20 years	21 - 24 years	25 years or older	
	Mean	Mean	Mean	Mean	Mean	
Entrepreneurial Intentions	3,7	3,6	4,0	3,7	3,6	0,000
Subjective Norm	-1,0	-3,0	2,2	-2,0	-2,5	0,001
Perceived Behavioral Control	3,9	4,0	3,8	4,1	4,0	0,020
Attitudes	4,9	4,9	4,8	4,9	5,0	0,050

SUM VARIABLES
The difference in the means is significant statistically between different groups of ages ($p \leq 0,05$).

Scale 1-7, except Subjective Norm -63 … +63

	All students	Have you attended an entrepreneurship-related course or training before your current studies?		
		Yes	No	p
		Mean	Mean	
Subjective Norm	**-1,0**	0,9	-1,7	0,028
Perceived Behavioral Control	**3,9**	4,1	3,9	0,003
Attitudes	**4,9**	5,0	4,8	0,001

If a student had attended an entrepreneurial-related course or training subjective norm, perceived behavioral control and attitudes are higher than no (p ≤ 0,05).

	All students	Have you started your own business before?		
		Yes	No	p
		Mean	Mean	
Entrepreneurial Intentions	3,7	4,2	3,7	0,000
Perceived Behavioral Control	3,9	4,4	3,9	0,000

If a student already is an entrepreneur intentions and perceived behavioral control are higher than no (p ≤ 0,05).

	All students	Are you currently starting your own business?		
		Yes	No	p
		Mean	Mean	
Entrepreneurial Intentions	3,7	4,8	3,6	0,000
Subjective Norm	-1,0	4,6	-1,7	0,005
Perceived Behavioral Control	3,9	4,6	3,9	0,000
Attitudes	4,9	5,4	4,8	0,000

If the student is about starting a business intentions, subjective norm, perceived behavioral control and attitudes are higher than no (p ≤ 0,05).

Scale 1-7, except Subjective Norm -63 … +63

	All students	Have some of your closest people worked as an entrepreneur?		
		Yes	No	p
		Mean	Mean	
Entrepreneurial Intentions	3,7	3,8	3,6	0,000
Perceived Behavioral Control	3,9	4,0	3,8	0,000
Attitudes	4,9	4,9	4,8	0,004

	All students	Has your father worked as an entrepreneur during his work career (part-time included?		
		Yes	No	p
		Mean	Mean	
Entrepreneurial Intentions	**3,7**	4,0	3,6	0,000
Perceived Behavioral Control	**3,9**	4,1	3,9	0,000
Attitudes	**4,9**	4,9	4,8	0,028

	All students	Has your mother worked as an entrepreneur during her work career (part-time included?		
		Yes	No	p
		Mean	Mean	
Entrepreneurial Intentions	**3,7**	3,9	3,7	0,001
Perceived Behavioral Control	**3,9**	4,1	3,9	0,001

ROLE MODELS of the closest people are important to young people

Scale 1-7, except Subjective Norm -63 … +63

Entrepreneurial Competence Framework

In the following, you will find a list of things associated with sustainable entrepreneurship and business skills. Please assess your own current abilities in regard to these things on scale: disagree completely 1 2 3 4 5 6 7 agree completely.

Entrepreneurial Competence Framework

Sum variables:

- Ideas and opportunities $\alpha = 0{,}870$
- Resources $\alpha = 0{,}821$
- Into Action $\alpha = 0{,}860$

Ideas and opportunities α = 0,870

- I use my imagination and abilities to identify opportunities for creating value.
- I develop creative and purposeful ideas.
- I work towards a vision of my future.
- I make the most of ideas and opportunities.
- I assess the consequences and impact of ideas, opportunities and actions.

Resources α = 0,821

- I believe in myself and keep developing.
- I know how to stay focused and don't give up.
- I gather and manage the resources I need.
- I have a good understanding of financial and economic issues.
- I inspire, enthuse and get others on board.

Scale 1-7

Into action α = 0,821

- I initiate processes that create value and can take up challenges.
- I know how to prioritize, organize and follow-up.
- I make decisions, thus dealing with uncertainty, ambiguity and risk.
- I know how to team-up, collaborate and network.
- I reflect and learn from both success and failure, my own and other people's.

Scale 1-7

Ideas and opportunities

Category	Mean
Humanities and Education	5,4
Social Sciences, Business and Administration	5,1
Culture	4,9
All students	4,7
Natural Sources and the Environment	4,7
Technology, Communications and Transport	4,6
Tourism, Catering and Domestic Services	4,5
Natural Sciences	4,5
Social Services, Health and Sports	4,4
Not applicable	5,0

p < 0,001

MEAN

Resources

Category	Mean
Social Sciences, Business and Administration	4,9
Humanities and Education	4,6
All students	4,5
Technology, Communications and Transport	4,5
Natural Sources and the Environment	4,4
Natural Sciences	4,3
Culture	4,2
Tourism, Catering and Domestic Services	4,1
Social Services, Health and Sports	4,1
Not applicable	4,7

p < 0,001

MEAN

SUSTAINABILITY driven ENTREPRENEURSHIP

Into action

	Mean
GENCAT	5,1
WSX UK	5,0
BBS DE	4,9
APRO IT	4,9
SeAMK FI	4,7
RocFP NE	4,7
GENT BE	4,7
All students	4,6
Kurikka FI	4,6
SEDU FI	4,2

p < 0,001   MEAN

INTO ACTION
Students evaluation about their time management and cooperative skills.

Into action

Field	MEAN
Humanities and Education	5,1
Social Sciences, Business and Administration	5,0
Natural Sources and the Environment	4,7
All students	4,6
Culture	4,6
Technology, Communications and Transport	4,5
Natural Sciences	4,4
Social Services, Health and Sports	4,3
Tourism, Catering and Domestic Services	4,3
Not applicable	4,8

p < 0,001

SUSTAINABILITY driven ENTREPRENEURSHIP

	All students	Student of the		
		1. year	2. year	3. + year
	Mean	Mean	Mean	Mean
Ideas and opportunities	**4,7**	4,7	4,8	4,8
Resources	**4,5**	4,4	4,5	4,5
Into action	**4,6**	4,5	4,7	4,7

No significant difference between means of which years student is.

	All students	The students' age				p
		16 years or younger	17 - 20 years	21 - 24 years	25 years or older	
	Mean	Mean	Mean	Mean	Mean	
Ideas and opportunities	**4,8**	4,5	4,8	4,8	5,2	0,000
Resources	**4,5**	4,3	4,6	4,5	4,8	0,000
Into action	**4,6**	4,3	4,7	4,7	5,0	0,000

Scale 1-7

Students evaluate their abilities high (all means between 4,3 and 5,2). The younger ones gave lowest evaluation.

SUSTAINABILITY
driven
ENTREPRENEURSHIP

	All students	Have you attended an entrepreneurship-related course or training before your current studies?		
		Yes	No	p
		Mean	Mean	
Ideas ja opportunities	4,7	5,0	4,7	0,000
Resources	4,5	4,7	4,4	0,000
Into action	4,6	4,9	4,5	0,000

	All students	Are you currently starting your own business?		
		Yes	No	p
		Mean	Mean	
Ideas ja opportunities	4,7	5,4	4,6	0,000
Resources	4,5	5,2	4,4	0,000
Into action	4,6	5,3	4,5	0,000

	All students	Have you started your own business before?		
		Yes	No	p
		Mean	Mean	
Ideas ja opportunities	4,7	5,2	4,7	0,000
Resources	4,5	5,0	4,5	0,000
Into action	4,6	5,1	4,6	0,000

If a student had attended an entrepreneurial-related course or have started his own business means are almost 5,0 or higher.

Scale 1-7

SUSTAINABILITY driven ENTREPRENEURSHIP

	All students	Have some of your closest people worked as an entrepreneur?		
		Yes	No	p
		Mean	Mean	
Ideas ja opportunities	**4,7**	4,8	4,6	0,003
Resources	**4,5**	4,6	4,3	0,000
Into action	**4,6**	4,7	4,4	0,000

	All students	Has your father worked as an entrepreneur during his work career (part-time included?		
		Yes	No	p
		Mean	Mean	
Ideas ja opportunities	**4,7**	4,8	4,7	0,041
Resources	**4,5**	4,6	4,4	0,000
Into action	**4,6**	4,7	4,6	0,005

|	All students	Has your mother worked as an entrepreneur during her work career (part-time included?		
		Yes	No	p
		Mean	Mean	
Resources	**4,5**	4,6	4,5	0,031
Into action	**4,6**	4,8	4,6	0,015

If a student had attended an entrepreneurial-related course or have started his own business means are almost 5,0 or higher.

Abilities Related to Business Development

Please assess your own current abilities related to business development on a scale:

no ability 1   2   3   4   5   6   7 strong ability.

**Your own current abilities related to business development**

Explanations in the questionnaire:
- Growing a business (growth strategies)
- Different forms of entrepreneurship (i.e. part-time, hybrid entrepreneurs, light entrepreneurs, intra entrepreneurs, social entrepreneurs)
- Financing business (both starting and developing)
- Business transfers (buying or selling the company)
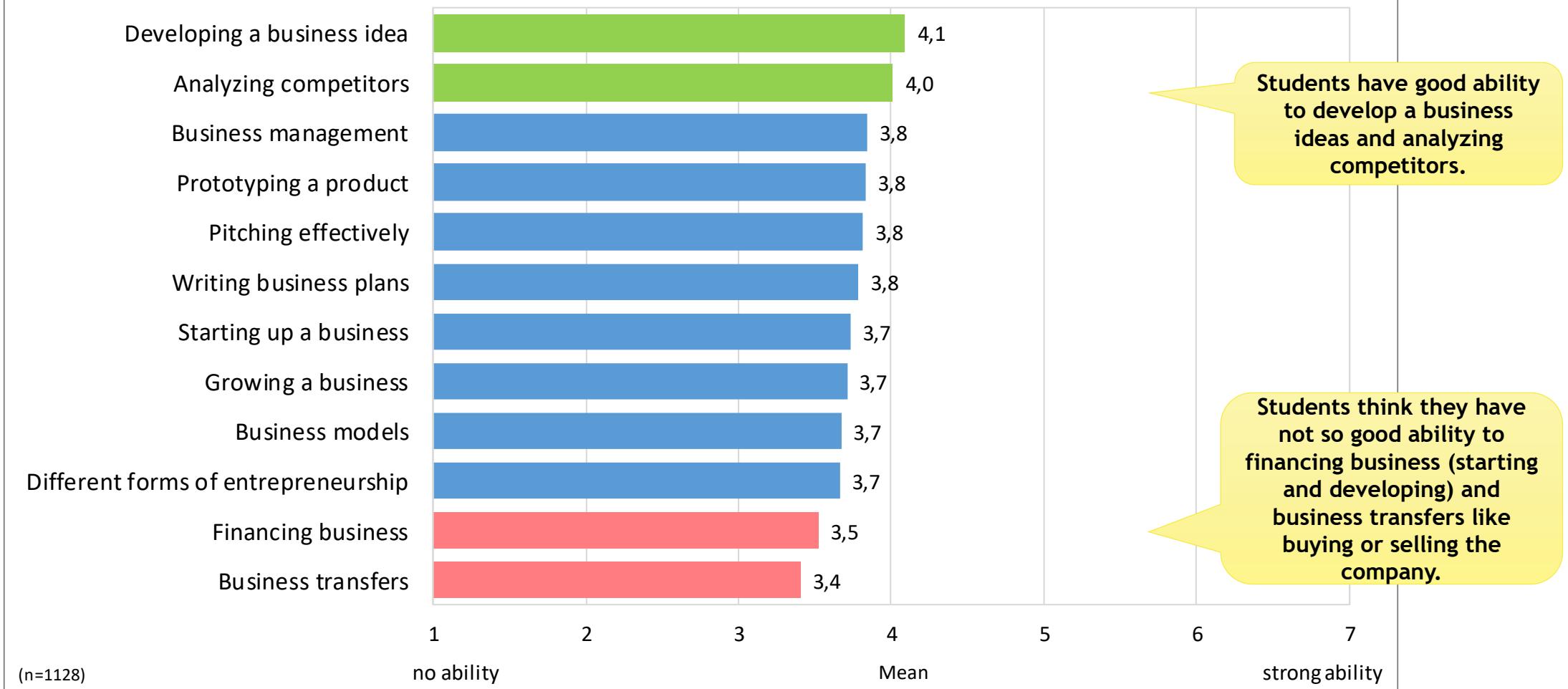
Ability	1=no ability	2	3	4	5	6	7=strong ability
Developing a business idea (mean 4,1)	6	9	16	31	22	12	5
Analyzing competitors (4,0)	6	11	16	30	22	10	5
Business management (3,8)	11	11	14	31	18	10	5
Prototyping a product (3,8)	8	11	17	33	18	9	4
Pitching effectively (3,8)	8	12	17	33	17	9	3
Writing business plans (3,8)	8	14	17	30	18	9	4
Starting up a business (3,7)	11	11	17	31	16	10	4
Growing a business (3,7)	11	12	16	31	17	8	4
Business models (3,7)	9	12	20	33	16	7	2
Different forms of entrepreneurship (3,7)	10	13	17	36	15	8	3
Financing business (3,5)	13	13	20	30	15	6	3
Business transfers (3,4)	16	14	16	32	13	6	3

(n=1128)

Students vs. teachers

Students own current abilities and teachers ability to teach competences related to business development	Students current abilities (n=1128)	Teachers ability to teach competences (n=125)
	Mean	Mean
Developing a business idea	4,1	3,9
Analyzing competitors	4,0	3,9
Business management	3,8	3,7
Writing business plans	3,8	3,7
Pitching effectively	3,8	3,6
Business models	3,7	3,6
Starting up a business	3,7	3,5
BUSINESS SKILLS	**3,8**	**3,4**
Different forms of entrepreneurship *)	3,7	3,4
Prototyping the product	3,8	3,1
Financing business (both starting and developing)	3,5	3,3
Growing a business (growth strategies)	3,7	3,0
Business transfers (buying or selling the company)	3,4	2,6

*) (i.e. part-time, hybrid entrepreneurs, light entrepreneurs, intra entrepreneurs, social entrepreneurs)

Scale 1-7, 1=no ability, 7=strong ability

Business Skills α = 0,958

Please assess your own current abilities related to business development on a scale:

no ability 1 2 3 4 5 6 7 strong ability

- Different forms of entrepreneurship (i.e. part-time, hybrid entrepreneurs, light entrepreneurs, intra entrepreneurs, social entrepreneurs)
- Business models
- Developing a business idea
- Analyzing competitors
- Writing business plans
- Prototyping a product
- Pitching effectively
- Starting up a business
- Business management
- Financing business (both starting and developing)
- Growing a business (growth strategies)
- Business transfers (buying or selling the company)
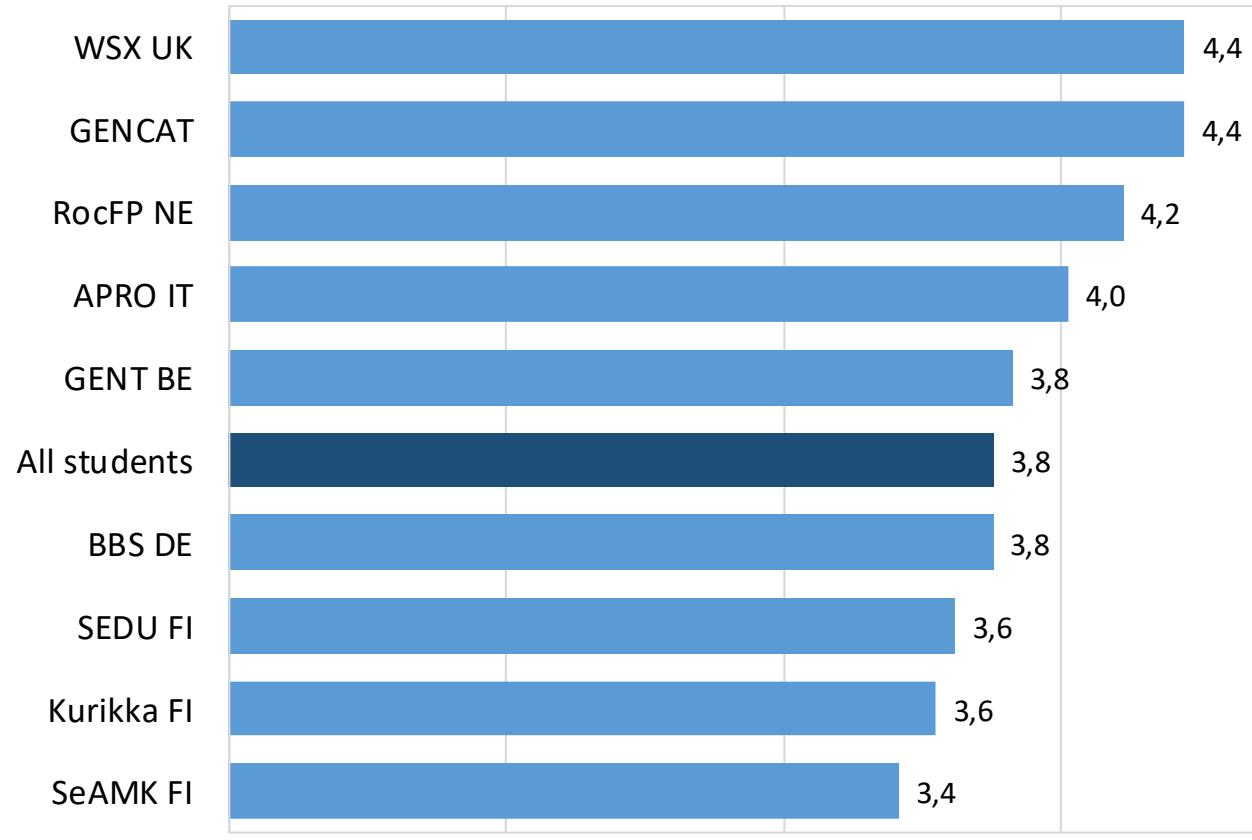
Scale 1-7
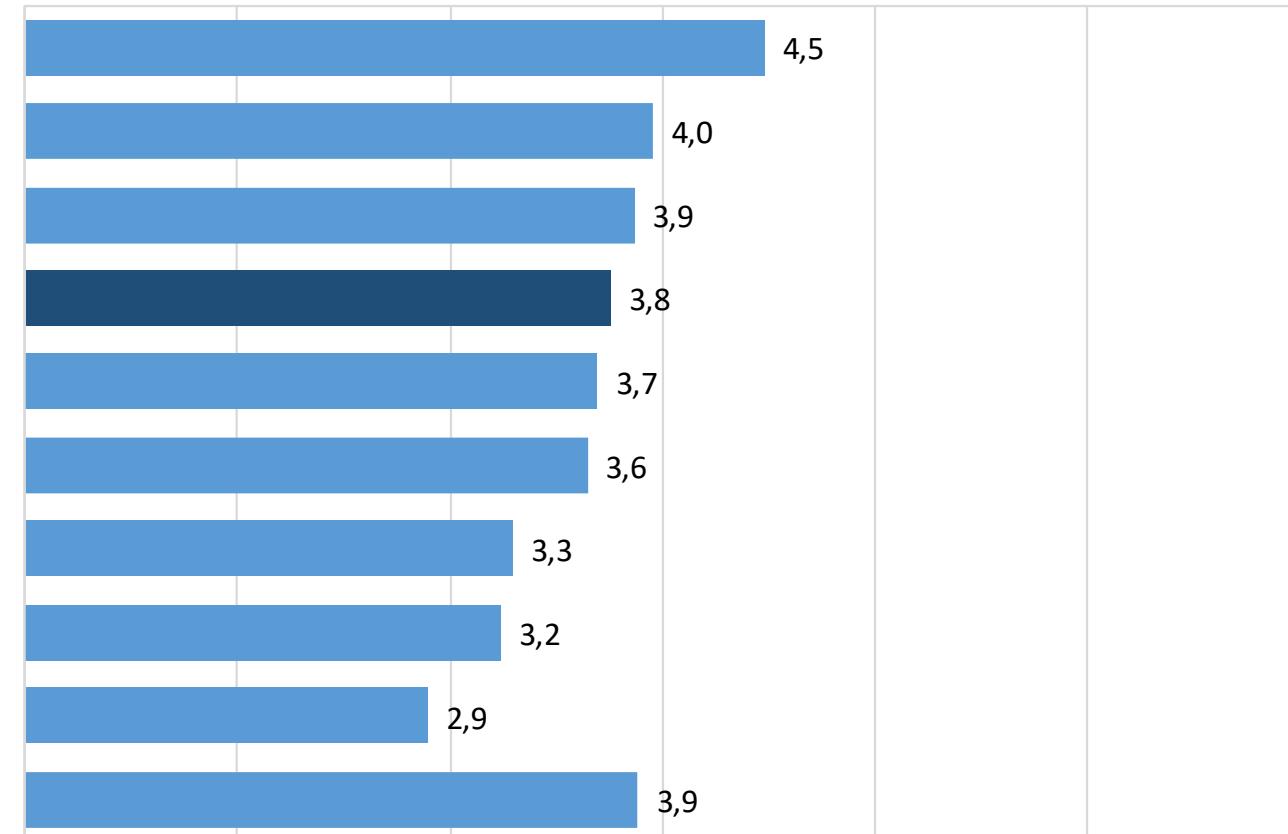
Business skills

Student of the	Business skills	
	Mean	**p**
1. year	3,8	
2. year	3,7	0,521
3. + year	3,8	
Gender		
Female	3,6	0,001
Male	3,9	
The students' age		
16 years or younger	3,7	
17 - 20 years	4,0	0,000
21 - 24 years	3,6	
25 years or older	3,6	

Scale 1-7

		Business skills	
		Mean	**p**
Have you attended an entrepreneurship-related course or training before your current studies?	Yes	4,0	0,000
	No	3,6	
Are you currently starting your own business?	Yes	4,7	0,000
	No	3,6	
Have you started your own business before?	Yes	4,7	0,000
	No	3,7	
Have some of your closest people worked as an entrepreneur?	Yes	3,9	0,000
	No	3,5	
Has your father worked as an entrepreneur during his work career (part-time included?	Yes	3,9	0,001
	No	3,7	
Has your mother worked as an entrepreneur during her work career (part-time included?	Yes	3,9	0,040
	No	3,7	
All students		**3,8**	

No difference between means of business skills of which years student the respondent is.
Male students evaluate their business skills higher than females.
Students over 20 years evaluated their business skills lower than younger ones.

Students who had studied entrepreneurship or started own business have better business skills compare to others.
Students whose closest people, father or mother worked as an entrepreneur has better business skills than others.

# Sustainable Entrepreneurship Competence Framework

In the following, you will find a list of things associated with sustainable entrepreneurship and business skills. Please assess your own current abilities in regard to these things on scale:

disagree completely 1 2 3 4 5 6 7 agree completely.

Diversity Competence α = 0,862

- I am able to bring together economic, social, and environmental conflicts of interest.
- I am able to actively involve stakeholders and experts from other disciplines in addressing sustainability issues.
- I am able to explain the importance of involving local stakeholders (e.g., in recruitment) for a company.

Scale 1-7

Diversity competence

Institution	Mean
GENCAT	4,7
Kurikka FI	4,5
WSX UK	4,3
RocFP NE	4,3
SeAMK FI	4,1
All students	4,1
APRO IT	4,0
GENT BE	3,9
SEDU FI	3,9
BBS DE	3,8

p < 0,001

MEAN
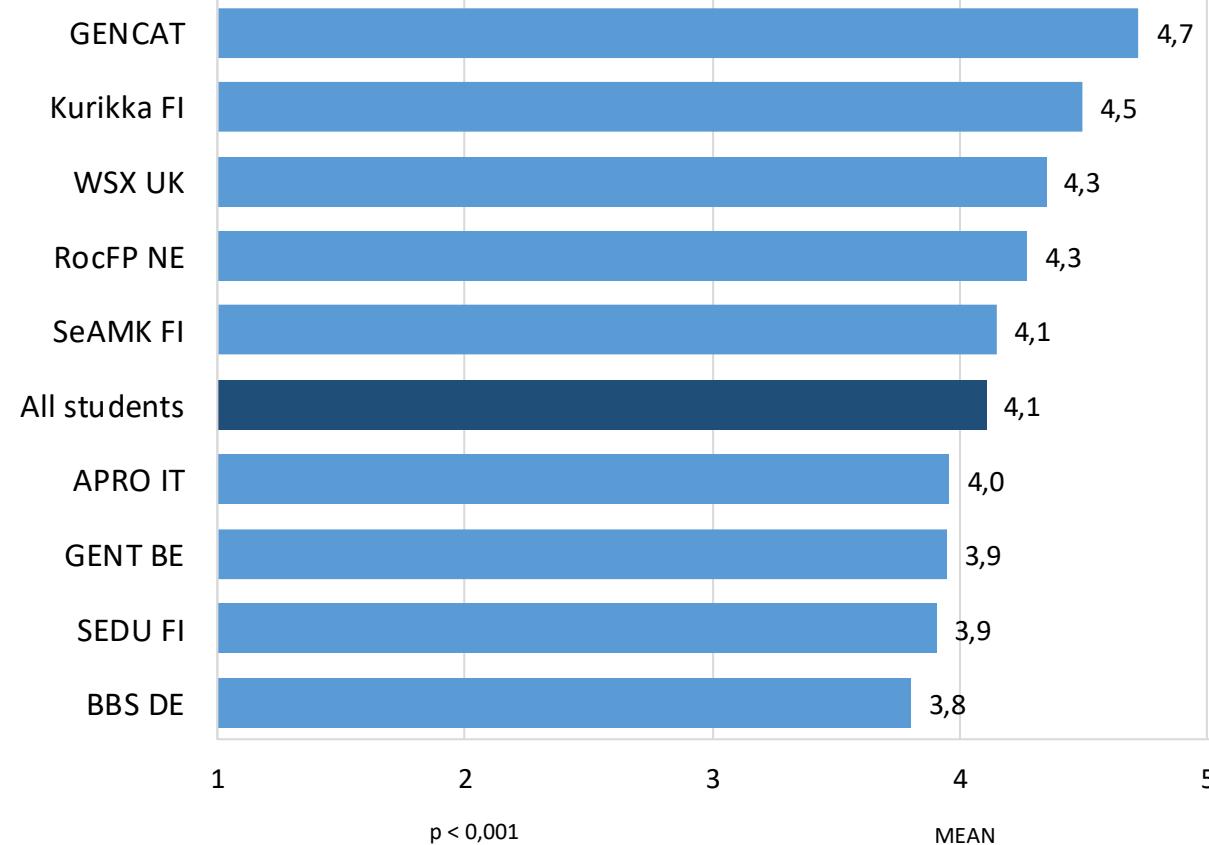
Diversity Competence
Embracing diversity and interdisciplinary competence: The ability to structure relationships, spot issues, and recognize the legitimacy of other viewpoints in business decision making processes; be it about environmental, social, and/or economic issues.

Diversity competence

Category	Mean
Social Sciences, Business and Administration	4,7
Natural Sources and the Environment	4,4
Humanities and Education	4,1
All students	4,1
Technology, Communications and Transport	4,0
Tourism, Catering and Domestic Services	4,0
Culture	3,8
Natural Sciences	3,7
Social Services, Health and Sports	3,7
Not applicable	4,1
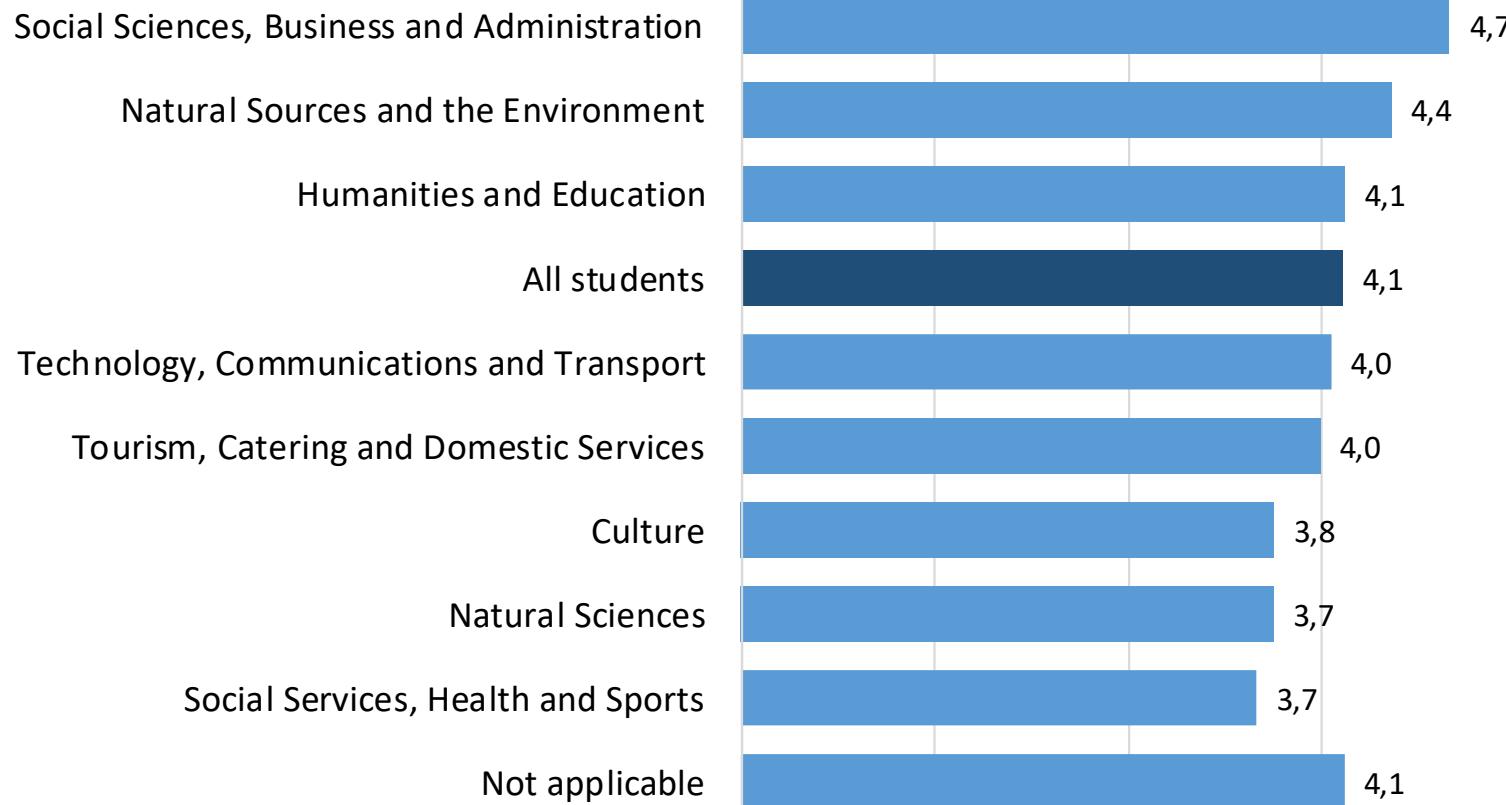
$p < 0,001$

MEAN

Foresighted Thinking Competence α = 0,896

- I am able to construct and consider different directions for sustainability in the future.
- I am able to identify risks and opportunities inherent in present and future developments.
- In analyzing and evaluating scenario's for action, I take the impact on the short as well as the long term into consideration.
- In analyzing and evaluating scenario's for action, I take both the impact on the local and the global scales into consideration.

Scale 1-7

Foresighted thinking competence

| Category	Mean
Social Sciences, Business and Administration	4,7
Natural Sources and the Environment	4,4
Humanities and Education	4,3
All students	4,2
Technology, Communications and Transport	4,0
Tourism, Catering and Domestic Services	4,0
Natural Sciences	3,9
Culture	3,9
Social Services, Health and Sports	3,8
Not applicable	4,4

p < 0,001

MEAN

Systems Thinking Competence α = 0,840

- I am able to identify the key operations of a company that have a negative impact on the environment or society.
- I am able to analyze strengths and weaknesses of production chains and propose improvements to reduce the negative effects on the environment or society.
- I am able to integrate social, environmental, and societal issues into future plans of a company.

Scale 1-7

Systems thinking competence
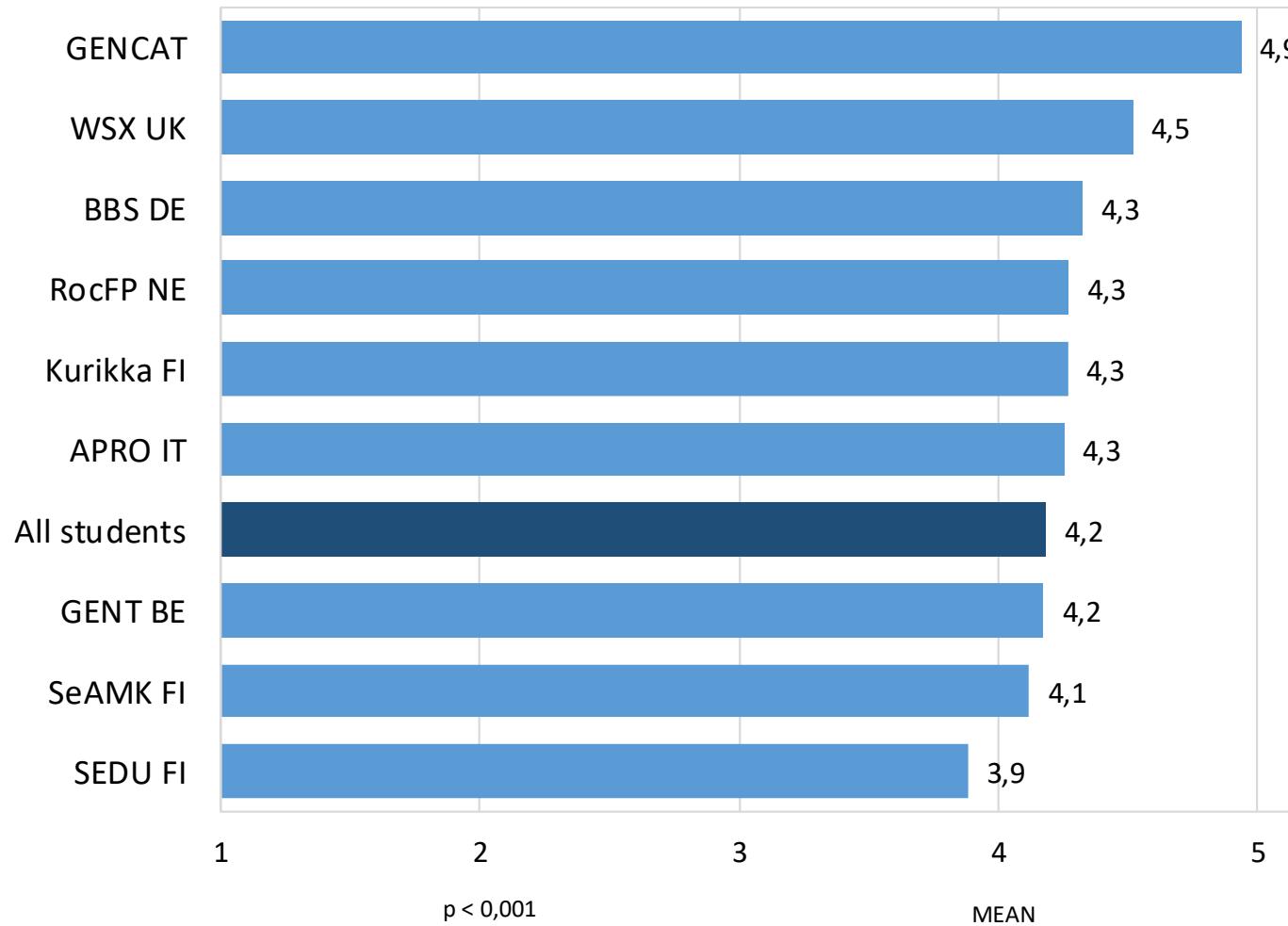
Category	Mean
Social Sciences, Business and Administration	4,7
Humanities and Education	4,5
Natural Sources and the Environment	4,4
All students	4,2
Natural Sciences	4,1
Technology, Communications and Transport	4,1
Culture	3,8
Tourism, Catering and Domestic Services	3,8
Social Services, Health and Sports	3,7
Not applicable	4,3

p < 0,001

MEAN
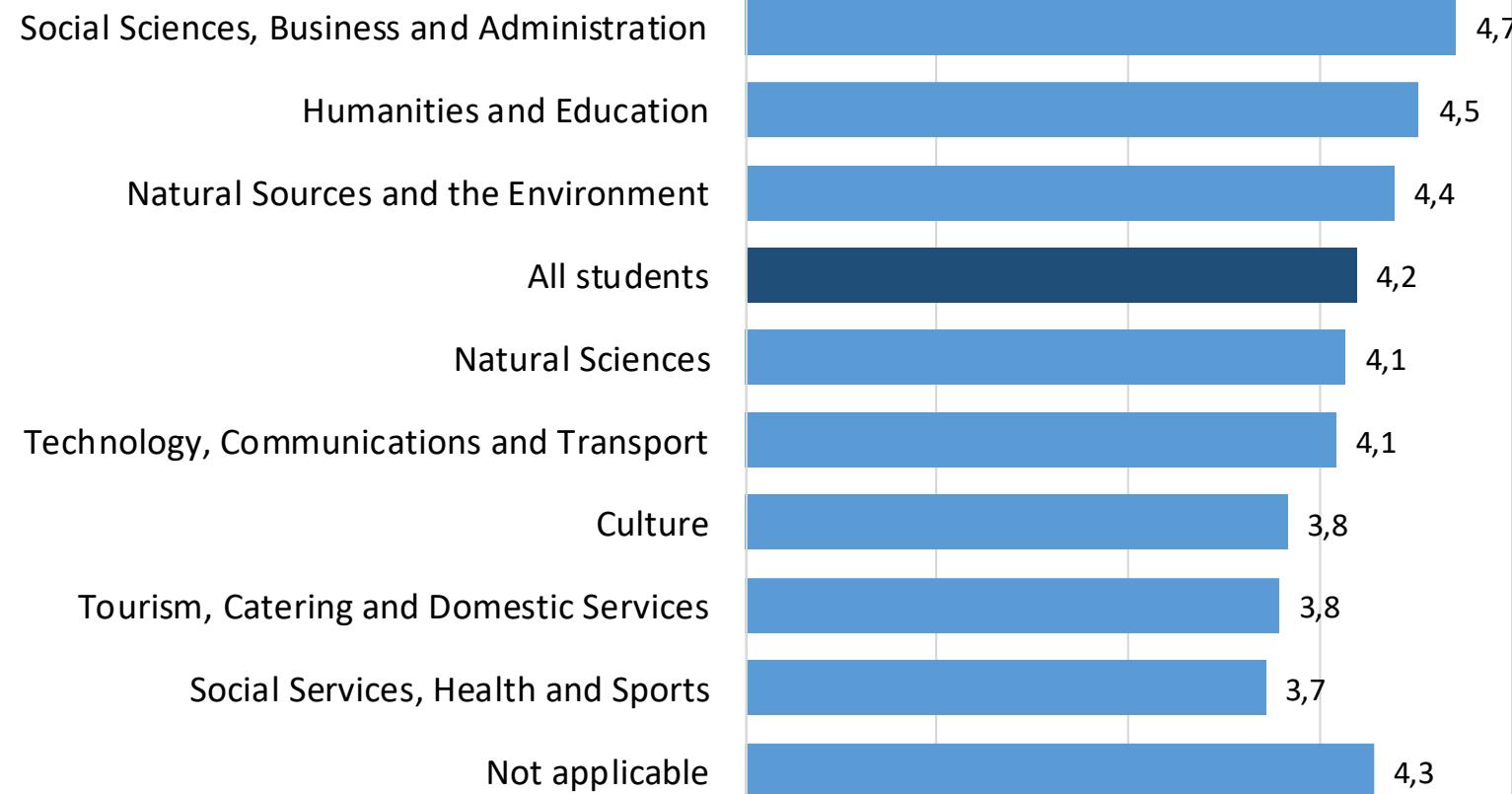
Normative Competence α = 0,907

- I am willing to take initiative to make improvements in my own practice based on norms, values, targets, and principles of sustainability.
- I know what is seen as "good sustainable practice" in my field of study.
- I am able to apply norms, values, targets, and principles of sustainability to my own practice.
- I challenge not sustainable ways of working in a company.
- I am very good at identifying opportunities for sustainable development.

Scale 1-7

Normative competence

Institution	Mean
GENCAT	4,9
WSX UK	4,6
BBS DE	4,5
RocFP NE	4,4
GENT BE	4,4
Kurikka FI	4,3
APRO IT	4,2
All students	4,2
SeAMK FI	4,1
SEDU FI	3,9

p < 0,001

MEAN
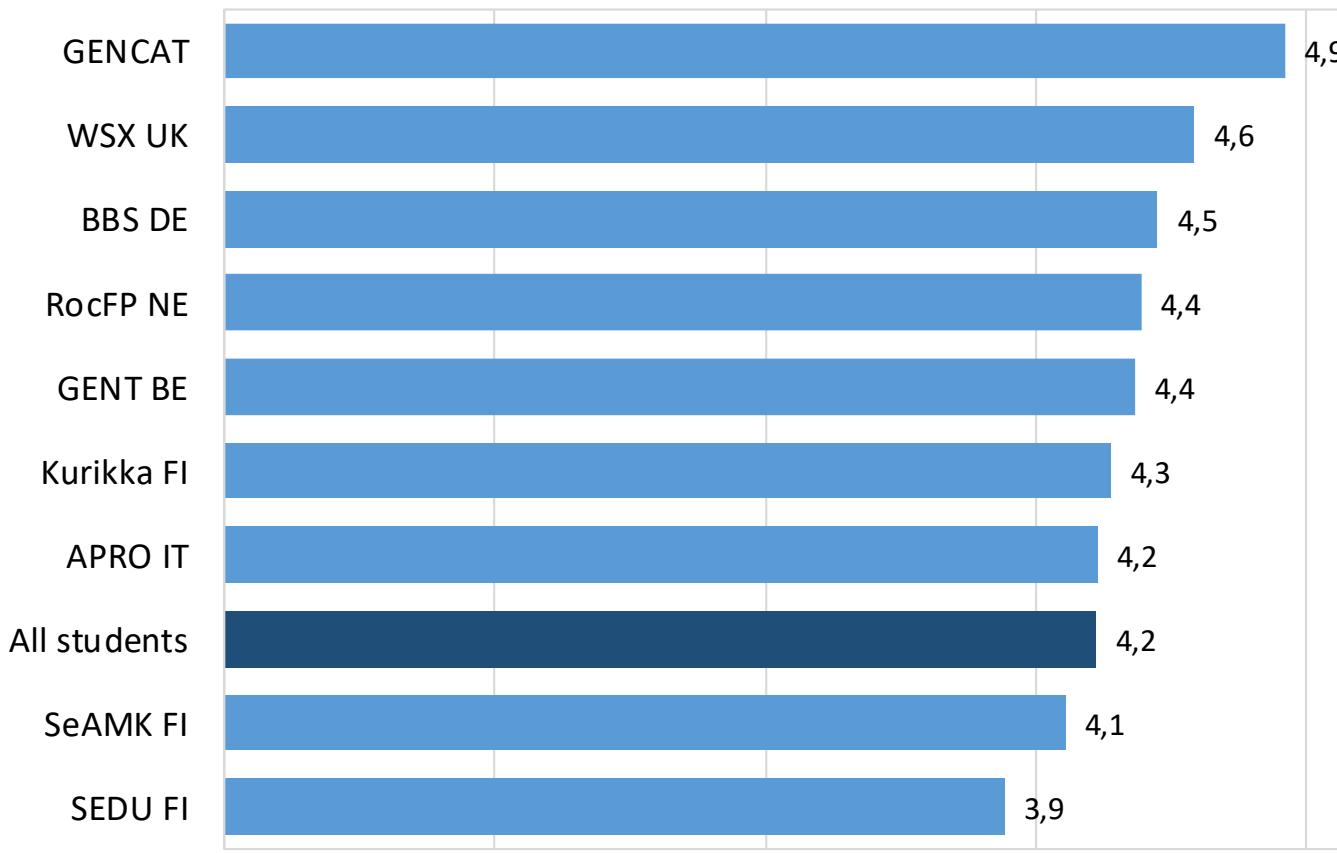
Normative competence: The ability to map, apply, and reconcile sustainability values, principles, and targets with internal and external stakeholders, without embracing any given norm but based on the good character of the one who is involved in sustainability issues.

Normative competence

| Category	Mean
Humanities and Education	4,7
Social Sciences, Business and Administration	4,7
Natural Sources and the Environment	4,4
All students	4,2
Natural Sciences	4,2
Technology, Communications and Transport	4,1
Culture	3,9
Tourism, Catering and Domestic Services	3,8
Social Services, Health and Sports	3,8
Not applicable	4,4

p < 0,001

MEAN
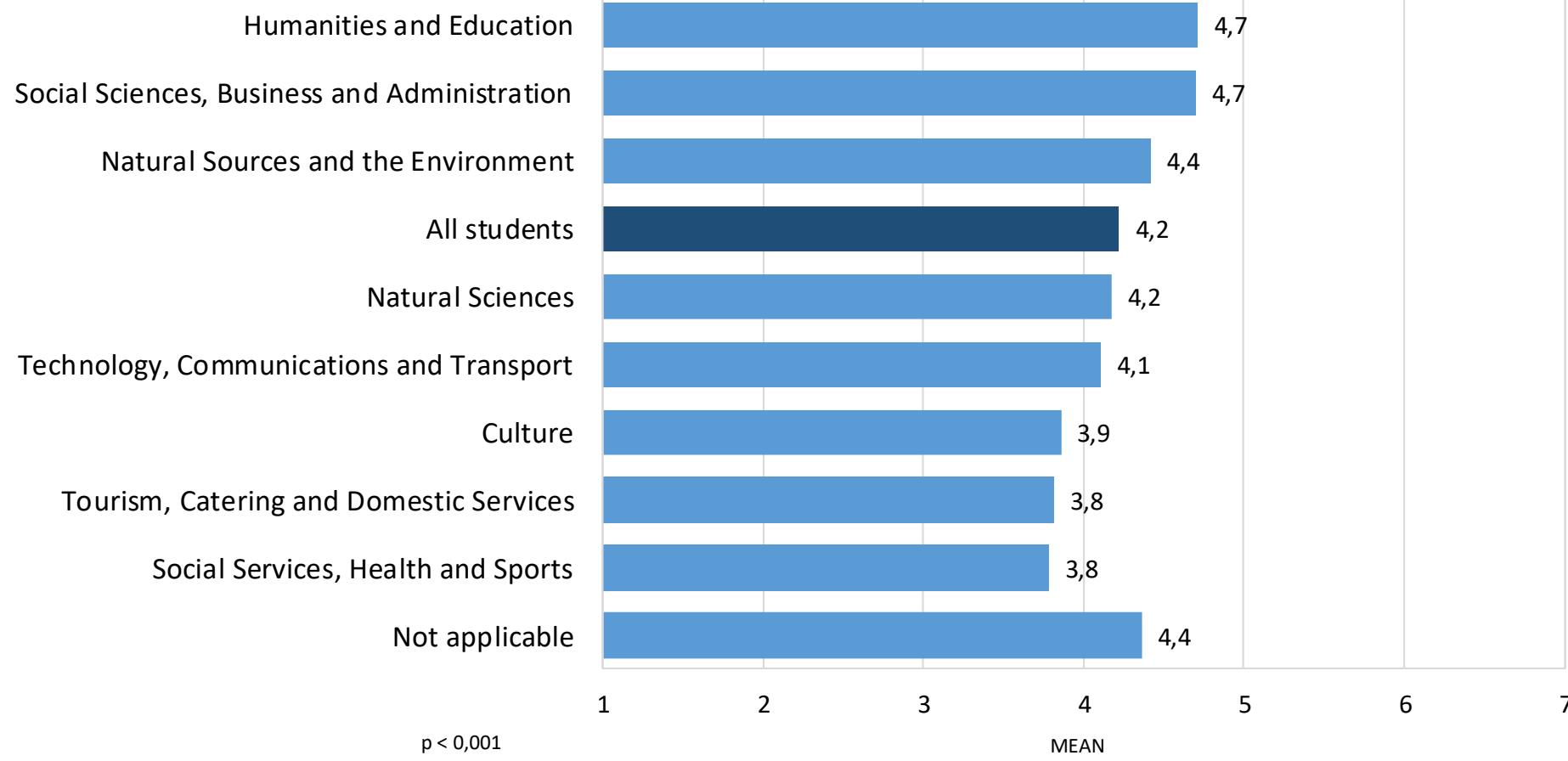
Strategic Action Competence α = 0,891

- I know how social, environmental, or societal challenges can be turned into opportunities for an organization/company.
- I am able to motivate others to invest in sustainability.
- If I want to reach goals in relation to sustainability, I know which steps should be taken to be successful.
- I am able to monitor the sustainability performance of a company.

Scale 1-7

Strategic action competence

Category	Mean
Social Sciences, Business and Administration	4,5
Natural Sources and the Environment	4,3
Humanities and Education	4,1
Natural Sciences	4,0
All students	4,0
Technology, Communications and Transport	3,9
Tourism, Catering and Domestic Services	3,6
Culture	3,5
Social Services, Health and Sports	3,4
Not applicable	4,1

p < 0,001

MEAN
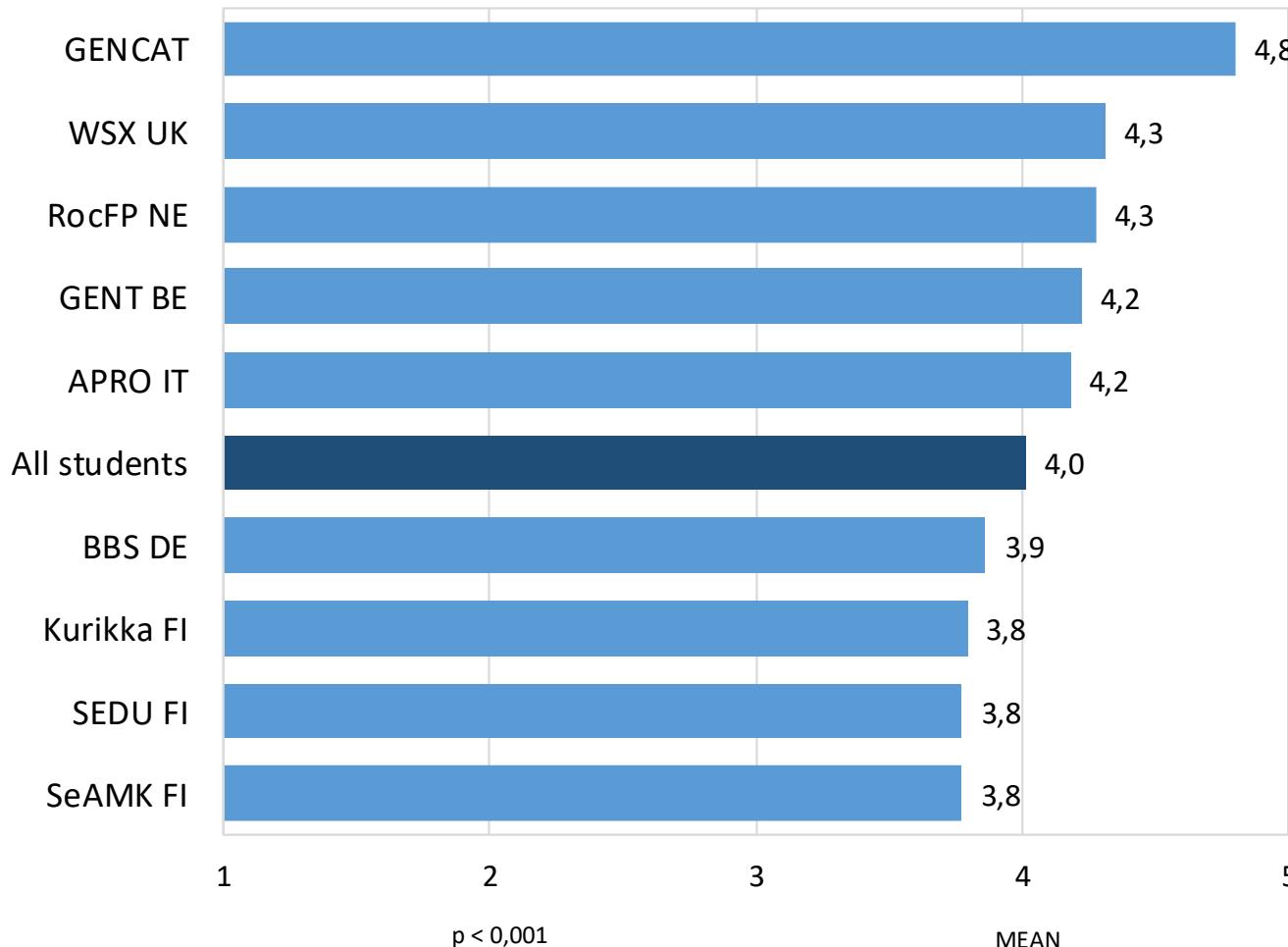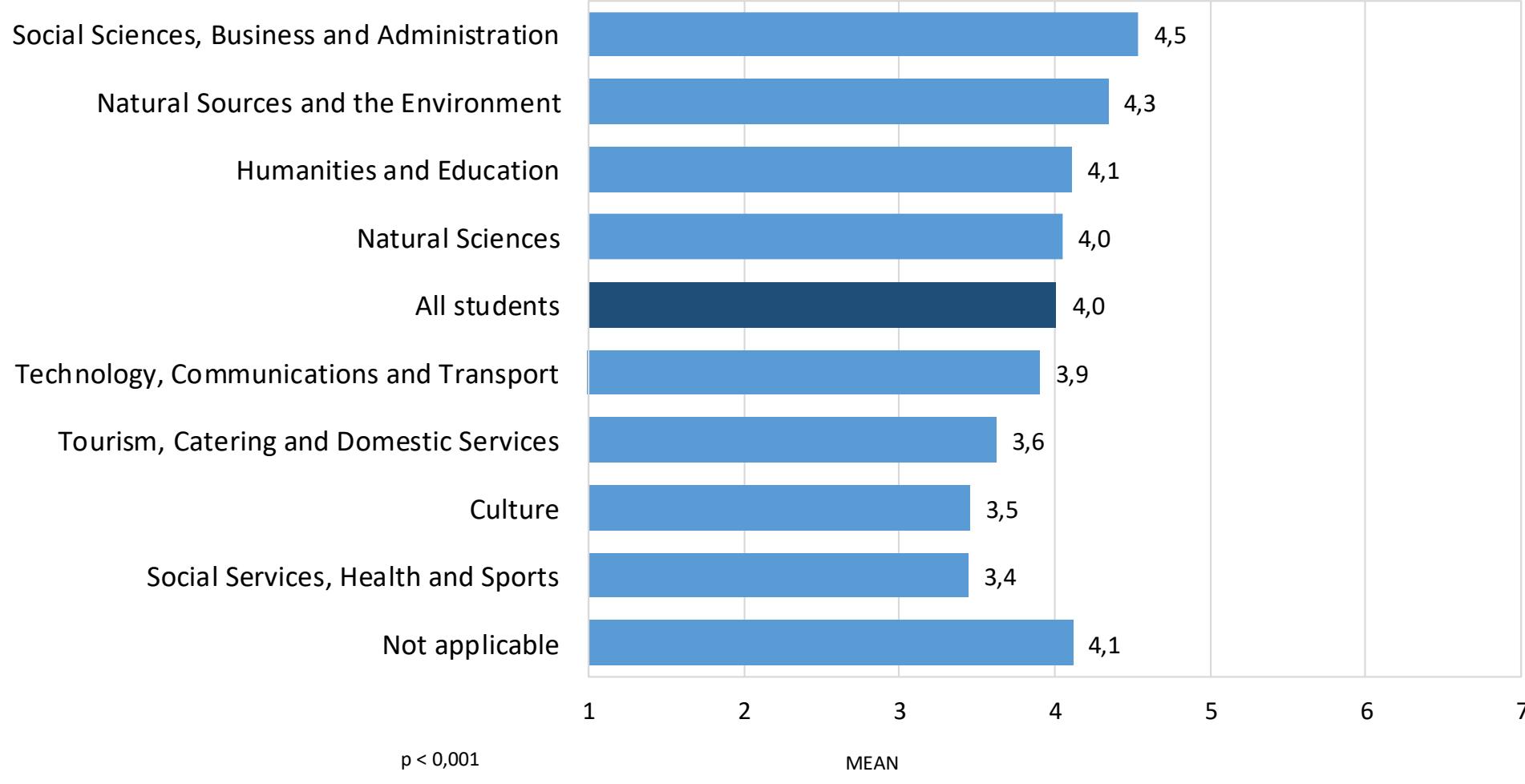
Interpersonal Competence α = 0,818

- I let others know how much I appreciate cooperating with him or her in solving complex issues.
- I stand up for my rights if someone is overlooking (forgetting) one or more aspects of sustainability.
- I am able to feel to what extent stakeholders are willing to cooperate in a project.

Scale 1-7
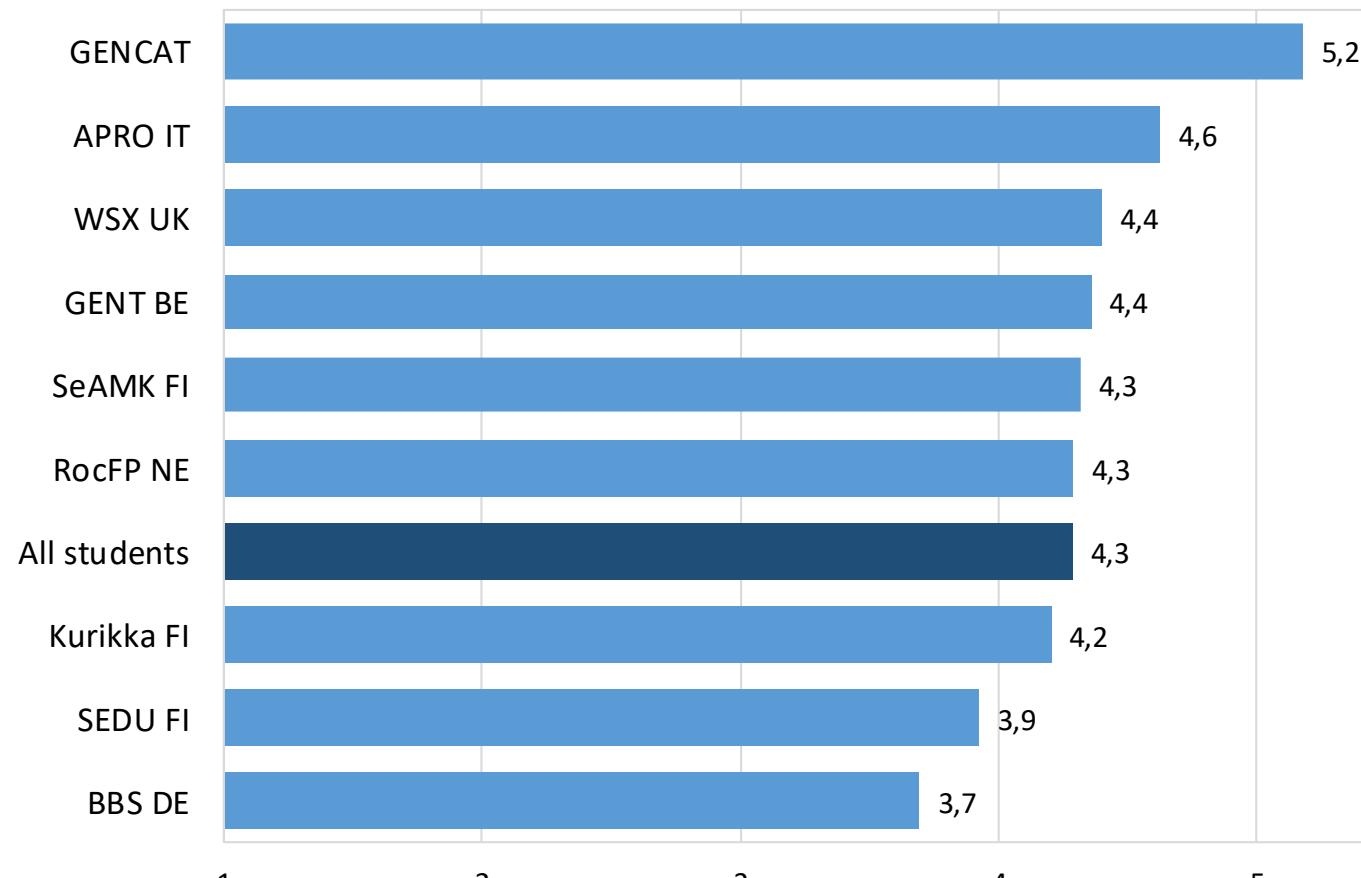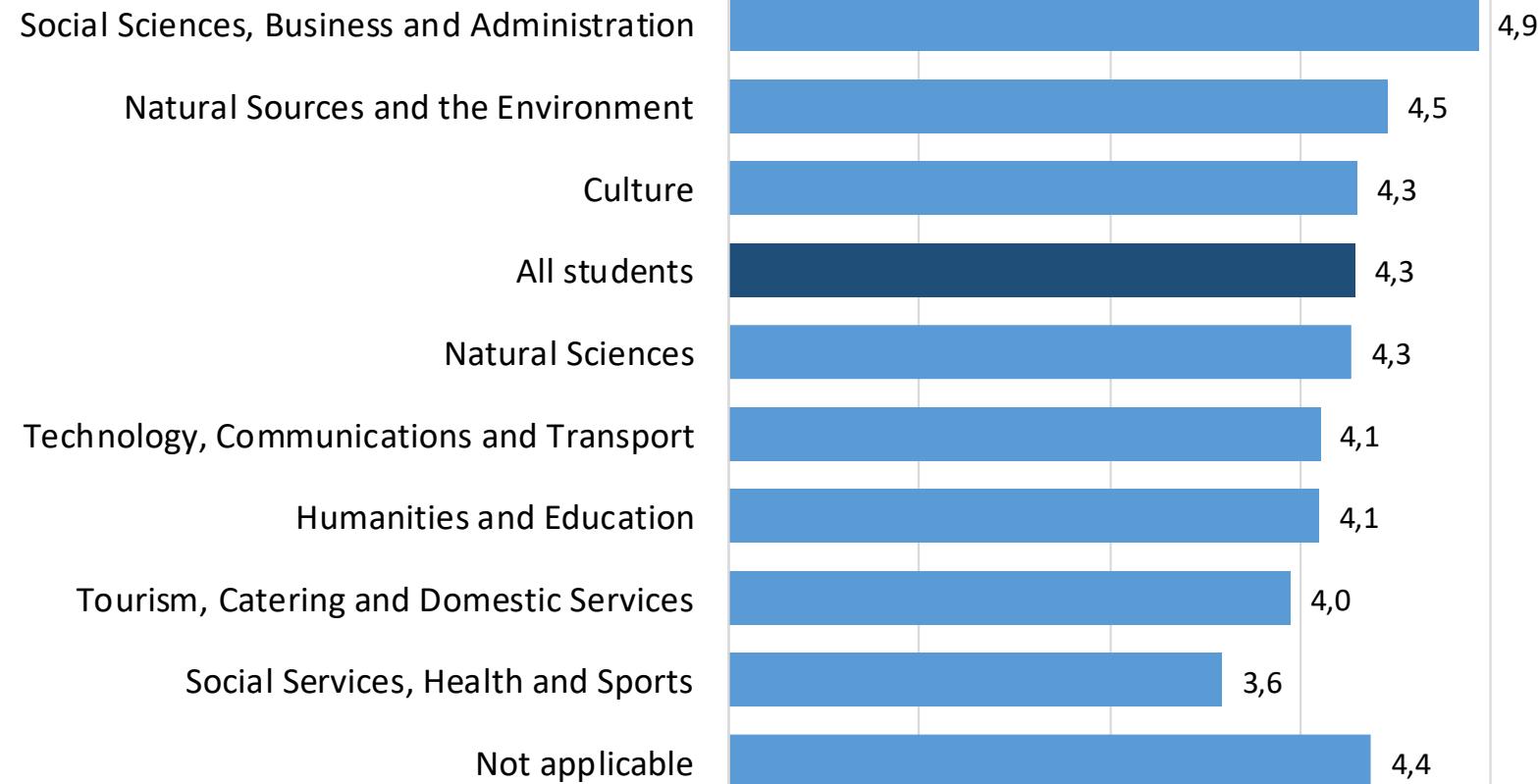
	All students	Student of the		
		1. year	2. year	3. + year
	Mean	Mean	Mean	Mean
Diversity competence	**4,1**	4,2	4,1	4,1
Foresighted thinking competence	**4,2**	4,2	4,1	4,2
Systems thinking competence	**4,2**	4,2	4,2	4,2
Normative competence	**4,2**	4,1	4,3	4,2
Strategic action competence	**4,0**	4,0	4,1	4,0
Interpersonal competence	**4,3**	4,2	4,3	4,3

Scale 1-7

Not any significant difference between the means.

	All students	Gender		p
		Female	Male	
	Mean	Mean	Mean	
Diversity Competence	**4,1**	4,0	4,2	0,036

Males gave higher evaluation to their diversity competence than females.

	All students	The students' age				p
		16 years or younger	17 - 20 years	21 - 24 years	25 years or older	
	Mean	Mean	Mean	Mean	Mean	
Foresighted Thinking Competence	**4,2**	4,0	4,3	4,2	4,1	0,024
Systems Thinking Competence	**4,2**	4,0	4,3	4,2	4,3	0,023
Normative Competence	**4,2**	4,0	4,3	4,3	4,4	0,001
Strategic Action Competence	**4,0**	3,9	4,2	4,0	3,9	0,002
Interpersonal Competence	**4,3**	4,1	4,3	4,4	4,4	0,004

The young ones gave the lo……

Scale 1-7

	All students	Have you attended an entrepreneurship-related course or training before your current studies?		
		Yes	No	p
		Mean	Mean	
Diversity competence	4,1	4,4	4,0	0,000
Foresighted thinking competence	4,2	4,4	4,1	0,000
Systems thinking competence	4,2	4,4	4,1	0,000
Normative competence	4,2	4,5	4,1	0,000
Strategic action competence	4,0	4,2	3,9	0,000
Interpersonal competence	4,3	4,6	4,2	0,000

All competences are higher Students who have attended to entrepreneurship-related courses or training compare to others evaluate all competences remarkable higher compares to others. All competences are significant higher if a student has own business.

?	All students	Are you currently starting your own business?			Have you started your own business before?		
		Yes	No	p	Yes	No	p
		Mean	Mean		Mean	Mean	
Diversity competence	4,1	4,8	4,0	0,000	4,6	4,1	0,000
Foresighted thinking competence	4,2	4,9	4,1	0,000	4,8	4,1	0,000
Systems thinking competence	4,2	4,9	4,1	0,000	4,9	4,1	0,000
Normative competence	4,2	5,0	4,1	0,000	4,8	4,2	0,000
Strategic action competence	4,0	4,7	3,9	0,000	4,7	4,0	0,000
Interpersonal competence	4,3	4,9	4,2	0,000	4,7	4,3	0,001

Scale 1-7

	All students	Have some of your closest people worked as an entrepreneur?		
		Yes	No	p
		Mean	Mean	
Diversity competence	4,1	4,2	3,9	0,000
Foresighted thinking competence	4,2	4,3	4,0	0,000
Systems thinking competence	4,2	4,3	4,0	0,000
Normative competence	4,2	4,3	4,0	0,000
Strategic action competence	4,0	4,1	3,8	0,000
Interpersonal competence	4,3	4,4	4,1	0,002

ROLE MODELS
If closest people, father or mother worked as an entrepreneur students' competences are higher compare to others.

	All students	Has your father worked as an entrepreneur during his work career (part-time included?			Has your mother worked as an entrepreneur during her work career (part-time included?		
		Yes	No	p	Yes	No	p
		Mean	Mean		Mean	Mean	
Diversity competence	4,1	4,3	4,0	0,000	4,3	4,1	0,004
Foresighted thinking competence	4,2	4,3	4,1	0,001	4,3	4,1	0,026
Systems thinking competence	4,2	4,3	4,1	0,005	4,4	4,1	0,006
Normative competence	4,2	4,3	4,2	0,030	4,4	4,2	0,033
Strategic action competence	4,0	4,1	3,9	0,007	4,2	3,9	0,001
Interpersonal competence	4,3	4,4	4,2	0,003	4,5	4,2	0,003

Scale 1-7

Students vs. teachers

Students own current abilities and teachers ability to teach Sum variables	Students current abilities (n=1128)	Teachers ability to teach competences (n=125)
	Mean	Mean
Ideas and opportunities	4,7	4,6
Resources	4,5	4,7
Into action	4,6	4,7
Business skills	3,8	3,4
Diversity competence	4,1	4,3
Foresighted thinking competence	4,2	4,1
Systems thinking competence	4,2	3,8
Normative competence	4,2	4,3
Strategic action competence	4,0	3,7

Scale 1-7, 1=no ability, 7=strong ability

I have a good understanding of financial and economic issues – extra survey

- I have a good understanding of financial and economic issues.

Recoded 1=disagree (values 1-3), 2=neutral (value 4), 3=agree (values 5-7)

Your own current ability related to business development on a scale 1-7 (1=no ability, 7=strong ability)	I have a good understanding of financial and economic issues.				p
	All respondents (n=1128)	Disagree (values 1-3) (n=372)	Neutral (value 4) (n=348)	Agree (values 5-7) (n=408)	
	Mean	Mean	Mean	Mean	
Developing a business idea	4,1	3,4	4,1	4,7	0,000
Analyzing competitors	4,0	3,4	4,0	4,6	0,000
Business management	3,8	3,0	3,9	4,5	0,000
Prototyping a product	3,8	3,2	3,9	4,3	0,000
Pitching effectively	3,8	3,2	3,8	4,3	0,000
Writing business plans	3,8	3,1	3,8	4,4	0,000
Starting up a business	3,7	3,0	3,8	4,4	0,000
Growing a business (growth strategies)	3,7	3,0	3,8	4,3	0,000
Business models	3,7	3,0	3,7	4,3	0,000
Different forms of entrepreneurship *)	3,7	2,9	3,8	4,3	0,000
Financing business (both starting and developing)	3,5	2,7	3,6	4,2	0,000
Business transfers (buying or selling the company)	3,4	2,7	3,5	3,9	0,000
BUSINESS SKILLS	**3,8**	**3,0**	**3,8**	**4,3**	**0,000**

(*) i.e. part-time, hybrid entrepreneurs, light entrepreneurs, intra entrepreneurs, social entrepreneurs

Scale 1-7

Sustainability-driven Entrepreneurship Sum variables	All respondents (n=1128)	I have a good understanding of financial and economic issues.			p
		Disagree (values 1-3) (n=372)	Neutral (value 4) (n=348)	Agree (values 5-7) (n=408)	
	Mean	Mean	Mean	Mean	
Entrepreneurial Intentions	3,7	3,4	3,8	4,0	0,000
Subjective Norm	-1,0	-4,6	-1,2	2,6	0,000
Perceived Behavioral Control	3,9	3,6	4,0	4,2	0,000
Attitudes	4,9	4,6	4,8	5,1	0,000
Ideas and opportunities	4,7	4,3	4,6	5,3	0,000
Resources	4,5	3,7	4,4	5,3	0,000
Into action	4,6	4,1	4,5	5,2	0,000
Business skills	3,8	3,0	3,8	4,3	0,000

Scale 1-7, except Subjective Norm -63 … +63

Sustainability-driven Entrepreneurship Sum variables	All respondents (n=1128)	I have a good understanding of financial and economic issues.			p
		Disagree (values 1-3) (n=372)	Neutral (value 4) (n=348)	Agree (values 5-7) (n=408)	
	Mean	Mean	Mean	Mean	
Diversity Competence	4,1	3,5	4,1	4,6	0,000
Foresighted Thinking Competence	4,2	3,6	4,2	4,7	0,000
Systems Thinking Competence	4,2	3,7	4,2	4,7	0,000
Normative Competence	4,2	3,7	4,2	4,7	0,000
Strategic Action Competence	4,0	3,5	4,1	4,5	0,000
Interpersonal Competence	4,3	3,9	4,3	4,7	0,000
Sustainable Entrepreneurship Competence Framework	4,2	3,6	4,2	4,6	0,000

Scale 1-7