HAL
open science

Report on the Factors Influencing the Young Generation's Future Career Choices as part of A-STEP 2030 project

Riitta Lehtinen, Klara Kövesi, Mélanie Cantrel, Katriina Schrey-Niemenmaa

To cite this version:

Riitta Lehtinen, Klara Kövesi, Mélanie Cantrel, Katriina Schrey-Niemenmaa. Report on the Factors Influencing the Young Generation's Future Career Choices as part of A-STEP 2030 project. Helsinki Metropolia University of Applied Sciences. 2019, 47 p. hal-04032585

HAL Id: hal-04032585

https://ensta-bretagne.hal.science/hal-04032585

Submitted on 16 Mar 2023

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

REPORT OF ACTIVITY 2: TASK 1
REPORT R3:
REPORT ON THE FACTORS INFLUENCING THE YOUNG GENERATION'S FUTURE CAREER CHOICES

Recommended citation for this report:

Lehtinen, R., Kövesi, K., Cantrel, M. Schrey-Niemenmaa, K. (2019) "Report on the Factors Influencing the Young Generation's Future Career Choices as part of A-STEP 2030 project". pp. 1-47. Available at: https://www.astep2030.eu/en/project-reports

Written by:	Reviewed by:
Riitta Lehtinen, Metropolia UAS, Finland Klara Kövesi, ENSTA Bretagne, France Mélanie Cantrel, Universum Global, France Katriina Schrey-Niemenmaa, Finland	Una Beagon, TU Dublin, Ireland Alexandra Eklöf, Universum Global Claus Spliid, Aalborg University, Denmark Katriina Schrey-Niemenmaa, Finland

.

Contents

1.0 Executive summary 2
1.1 The structure of the document 2
2.0 Summary of Overall Research Project 3
3.0 Research Questions 5
4.0 Methodology 5
4.1 Context of the Universum study 5
4.2 Sample selection of the Universum study 6
4.3. Ethical Considerations 9
4.4. Data collection process 9
4.5. Data description and analysis 9
5.0 Results analyses 11
Structure of the analysis results 11
5.1. Career goals 11
5.1.1. Engineering students career goals 11
5.1.2. Comparison between male and female engineering students career goals 13
5.1.3. Comparison between engineering and humanities students career goals 16
5.1.4. Comparison between engineering students career goals with different ages 19
5.2. Soft skills 21
5.2.1. Students soft skills perception 21
5.2.2. Students' need for soft skills' improvement 28
5.3. Attractive employer attributes 35
5.3.1. Engineering students' attractive employer attributes 35
5.3.2. Comparison between male & female engineering students' attractive employer attributes 36
5.3.3. Comparison between engineering and humanities students' attractive employer attributes 38
5.3.4. Comparison between engineering students' attractive employer attributes with different age 41
6.0. Overall Summary 42
6.1. Career Goals 42
6.2. Soft skills 43
6.3. Attractive employer attributes 43
7.0 Conclusion 43
8.0 Acknowledgements 44

1.0 Executive summary

This project is an EU Erasmus + project funded under call number 2018-1-FR01-KA203-047854. This is the 3rd report of A-STEP2030 ERASMUS+ project. The main objective of this project is to develop new and innovative teaching approaches, which are relevant to learners' values, yet appropriate to teach a new set of skills and competencies needed for the future. Our goal is to create an attractive and fascinating learning environment, thereby encouraging young people and adult learners with diverse backgrounds to engage in engineering studies and the profession as a whole.

The project consortium has 7 members from six EU countries (France, Denmark, Finland, Ireland, Sweden and Belgium) and 10 associated partners. The members are 4 Universities, one company, a European student organisation and a European Engineering Education Association. This setup gives the consortium an extensive view of the research questions and thus enables possibilities for finding new aspects for attracting diverse learners to engineering education.

The analysis investigated the career goals of young students and adult learners to obtain a better understanding of the drivers of their career decisions. This understanding will be an important consideration in the development of the new learning and teaching activities in order to make them more attractive and specifically adapted for a new generation of students. The comparisons in the focus countries (Finland, Sweden, Denmark, Belgium, France and Ireland) were made between:

- engineering students' results,
- male and female engineering students,
- engineering and humanities students,
- engineering students with different ages

The overall results show the most valued priority of engineering students is "to have work/life balance" and after that "to be dedicated to a cause or to feel that I am serving a greater good" priorities. Whereas with humanities students while the same two priorities were also identified but their order reversed. Surprisingly leadership and issues with money did not appear in the first positions. With these most important factors there seemed not to be big difference between the generations – but to have a secure and permanent job showed a significant difference between generations. It is more important for the young generation, compared to their older colleagues in all target countries (with the exception of France).

This report presents findings from the target countries in greater detail concerning students' career goals, their perceptions about their strong and weak soft skills and the employer attributes which they feel are important. In addition the differences between engineering and humanities students and between male and female engineering students at different ages are analysed in all these categories. This information gives data for the next stage of the project where the conclusions will be made.

1.1 The structure of the document

The document begins by explaining aims of the overall research project and more specifically, the research questions associated with Activity 2: Task 1.

The second section describe the methodology used by Universum for the quantitative study and highlights the context of the study, the sample selection and the data collection. The methodology used for data analysis and ethical considerations are also described.

The next section presents findings concerning students' career goals, their perceptions about their strong and weak soft skills and employer attributes which they feel are important, from target countries. The differences between engineering and humanities students and between male and female engineering students in addition to engineering students at different ages are analysed in all these categories.

The final section summarises the findings focusing on the results which are the most relevant to the overall research study.

2.0 Summary of Overall Research Project

The main objective of the A-STEP 2030 (Attracting diverSe Talent to the Engineering Professions of 2030) project is to develop new and innovative teaching approaches relevant to learners' values yet appropriate to teach a new set of skills and competencies needed for the future. Our goal is to create an attractive and fascinating learning environment thereby encouraging young people and adult learners with diverse backgrounds to engage in engineering studies and the profession as a whole.

The project comprises the following three activities:

Activity 1: Determine future roles and skills requirements of engineers to enhance the sustainable development of society.

Activity 2: Investigate the values and motivations of young people, students and adult learners to determine how this influences their future career choices and use this knowledge to make a career in engineering more attractive to all young people.

Activity 3: Develop new and innovative teaching and learning practices to respond to these findings.

The project consortium has 7 members from six EU countries (France, Denmark, Finland, Ireland, Sweden and Belgium) and 10 associated partners. The team includes four different European HEIs all involved in Engineering Education Research. (ENSTA Bretagne, France, TU Dublin, Ireland, Aalborg University, Denmark and Metropolia University, Finland.) The team is also complemented by representatives from SEFI and BEST (Board of European Students of Technology) which represents HEI students in STEM, and Universum - experts in research relating to student motivations and career choices.

Figure 1 shows the main activities associated with the project. This report focuses on the result of Activity 2: Task 1: Defining the values and motivations of the young generation with influence their career decisions.

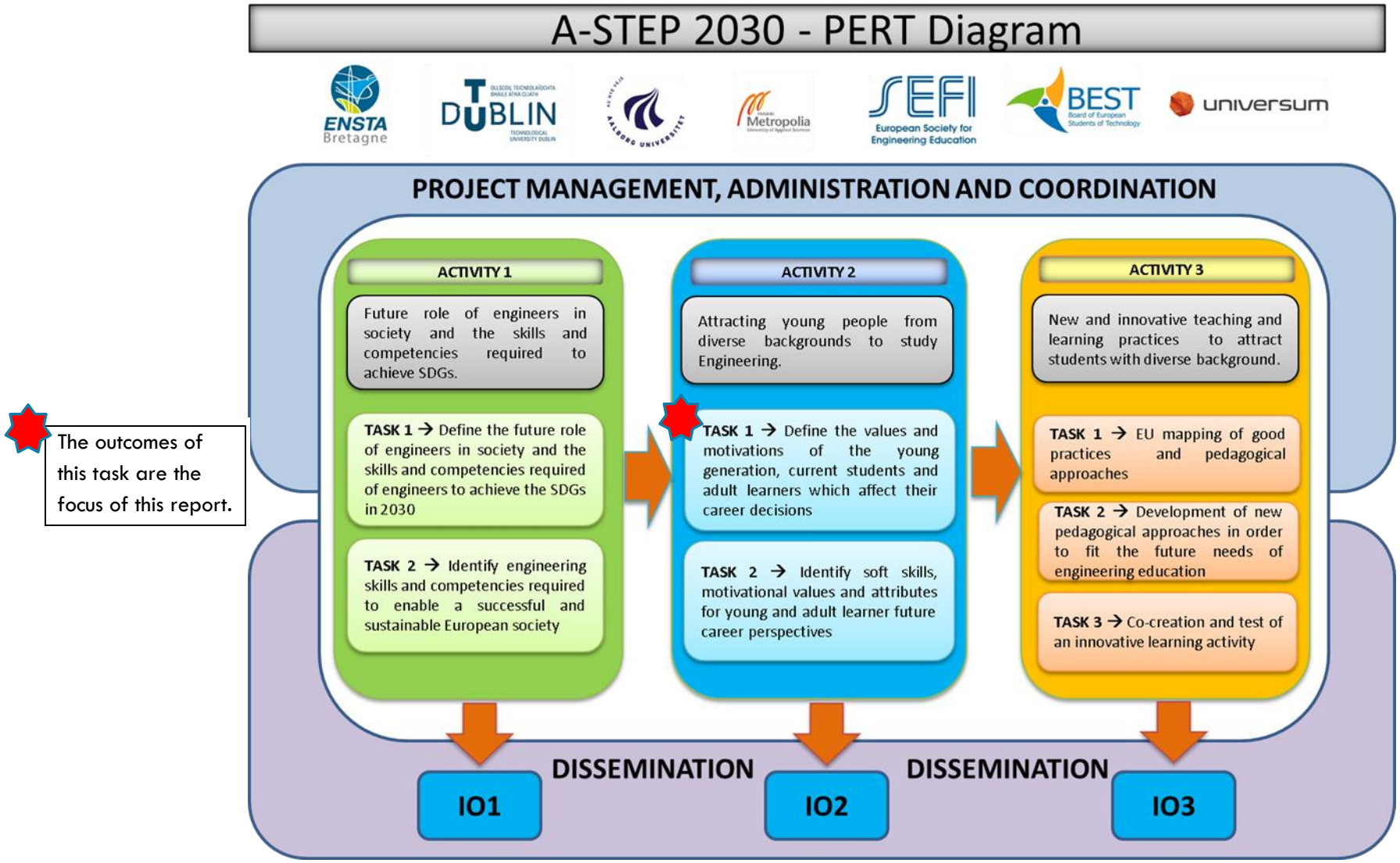

Figure 1: Overall Project details showing the aims of each activity.

3.0 Research Questions

The purpose of this Activity 2: Task 1 was to obtain a better understanding of male and female engineering and humanities students' attitudes towards their career goals, what attributes they consider important in employers and their perceptions about their strong and weak soft skills.

In this study, the following research questions were raised:

Career goals

1. **Which are the three most important and motivating career goals for students in each target country?**

Strong soft skills and soft skills to be improved

2. **Which are the soft skills that students consider themselves strongest in?**
3. **What soft skills they would like to improve?**

Attractive employer attributes

4. **Which are the most important and valuable employer attributes influencing students' career decisions?**

For each question, the differences between male and female engineering students, engineering and humanities students and students from generation Y and Z were investigated in six target countries Belgium, Denmark, Finland, France, Ireland and Sweden.

4.0 Methodology

4.1 Context of the Universum study

Universum is a leading company in the field of employer branding. On a yearly basis, Universum surveys over 1 million students and graduates concerning different aspects of their career expectations and their ideal employers. The study has been run every year in 40 different markets for the past 25 years. Universum uses a standardized questionnaire and methodology, allowing comparisons among students' expectations between countries.

Each market has a dedicated Analytics Project Manager (PM), responsible for ensuring the quality of the data collected. One main objective for the PM is to ensure the sample is a correct reflection of the reality of the market, and thus it can be considered a representative sample for the target population. Universum investigates many different variables to ensure this, such as: gender proportion, degree choice, area of study and university proportion.

The sample details of the countries considered in this analysis are displayed below. This includes, the total number of respondents collected in the different fields of study and the gender proportion in the engineering field - the focus of this report.

4.2 Sample selection of the Universum study

Belgium

In Belgium, the survey was run from October 2018 to April 2019, summary details are included in Table 1 and Figure 2.

In total, 13 102 students in Belgium participated in the study, of those 1 329 were Engineering students. The gender balance was 77.1 % men and 22.9 % women.

Table 1: Sample Selection Engineering Students Belgium 2019

Main field of study	Total number
Business	3593
Engineering	1329
IT	631
Natural Sciences	1027
Humanities	3222
Law	782
Health/Medicine	2518

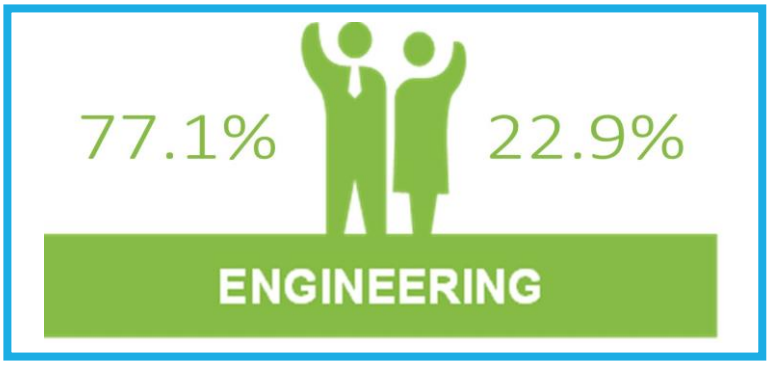

Figure 2: Gender Proportion Engineering Students Belgium 2019

Denmark

In Denmark, the survey was run from October 2018 to April 2019, summary details are included in Table 2 and Figure 3.

In total, 14 624 students in Denmark participated in the study, of those 2 334 were Engineering students. The gender balance was 63.4 % men and 36.6 % women.

Table 2: Sample Selection Engineering Students Denmark 2019

Main field of study	Total number
Business	4018
Engineering	2334
IT	1177
Natural Sciences	1174
Humanities	3803
Law	844
Health/Medicine	1274

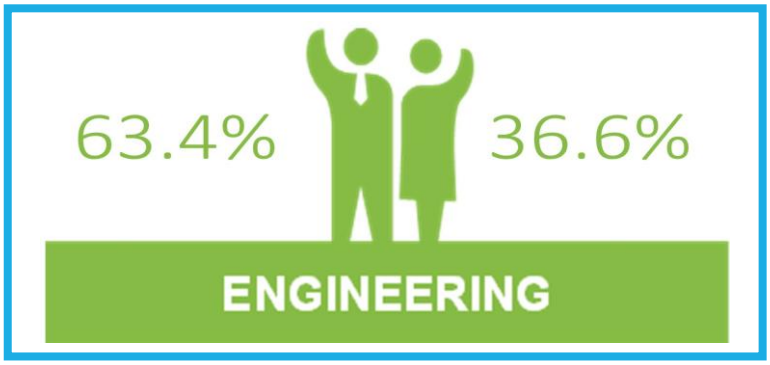

Figure 3: Gender Proportion Engineering Students Denmark 2019

Finland

In Finland, the survey was run from October 2018 to April 2019, summary details are included in Table 3 and Figure 4.

In total, 12 633 students in Finland participated in the study, of those 2 360 were Engineering students. The gender balance was 65.6 % men and 34.4 % women.

Table 3: Sample Selection Engineering Students Finland 2019

Main field of study	Total number
Business	3398
Engineering	2360
IT	978
Natural Sciences	716
Humanities	3100
Law	507
Health/Medicine	1574

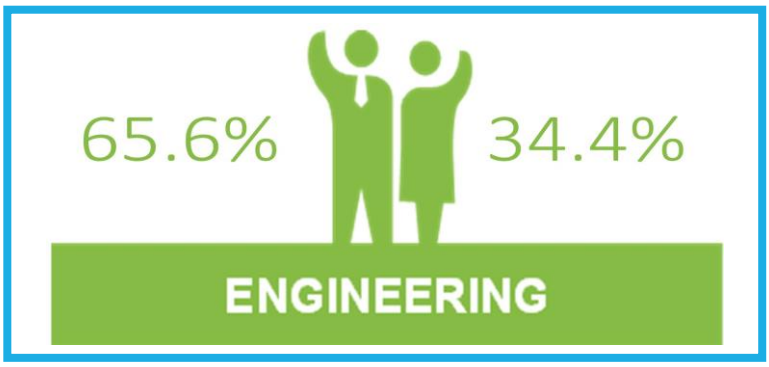

Figure 4: Gender Proportion Engineering Students Finland 2019

France

In France, the survey was run from September 2018 to February 2019, summary details are included in Table 4 and Figure 5.

In total, 36 578 students in France participated in the study, of those 12 615 were Engineering students. The gender balance was 69.0 % men and 31.0 % women.

Table 4: Sample Selection Engineering Students France 2019

Main field of study	Total number
Business	20153
Engineering	12615
IT	2449
Natural Sciences	574
Humanities	467
Law	150
Health/Medicine	170

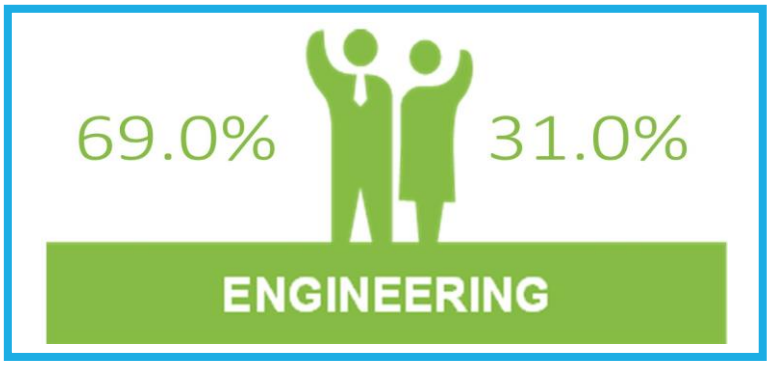

Figure 5: Gender Proportion Engineering Students France 2019

Ireland

In Ireland, the survey was run from September 2018 to March 2019, summary details are included in Table 5 and Figure 6.

In total, 10 086 students in Ireland participated in the study, of those 1 220 were Engineering students. The gender balance was 70.0 % men and 30.0 % women.

Table 5: Sample Selection Engineering Students Ireland 2019

Main field of study	Total number
Business	2567
Engineering	1220
IT	749
Natural Sciences	1487
Humanities	2547
Law	531
Health/Medicine	985

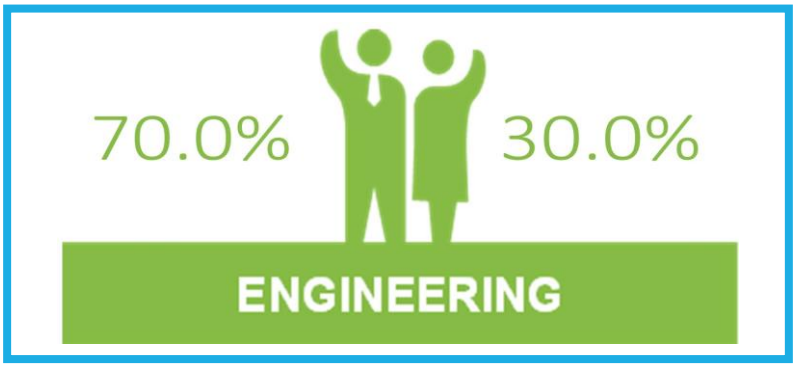

Figure 6: Gender Proportion Engineering Students Ireland 2019

Sweden

In Sweden, the survey was run from October 2018 to January 2019, summary details are included in Table 6 and Figure 7.

In total, 25 188 students in Sweden participated in the study, of those 1 674 were Bachelor's Engineering students and 4 066 were Master´s Engineering students.

The gender balance was 55.6 % men and 44.4 % women.

Table 6: Sample Selection Engineering Students Sweden 2019

Main field of study	Total number
Business/Economics	5169
MSc Engineering	4062
IT	1955
BSc Engineering	1674
Natural Sciences	1134
Social sciences/Communications/ Education	3941
Law	1222
Health/Medicine	1277
Pharma	130
Real estate agent	154
Teacher/Preschool Teacher	1861
Nurse	1201
Doctor	489
Social Worker	919

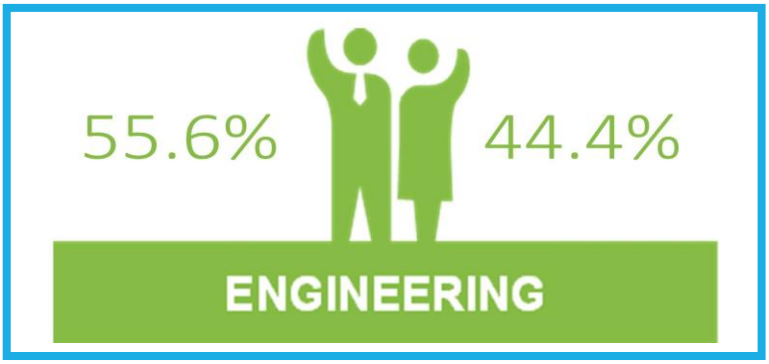

Figure 7: Gender Proportion Engineering Students Sweden 2019

4.3. Ethical Considerations

Aggregate data is used to ensure anonymity. Universum strives to exclude from the survey any questions that might be perceived to be sensitive. Participation is 100% voluntary and respondents can choose to stop the "Universum CareerTest" at any time. The "Universum CareerTest" has complied with the European regulation on personal data ever since this came into effect in May 2018. This means that no personal data is kept unless the participant has given his/her agreement.

4.4. Data collection process

The field periods for each market are mentioned above. The "Universum CareerTest" is promoted through several channels in order to be able to reach different student target audiences, and is available online on any computer, smartphone or tablet. The survey is promoted through direct partnerships with universities, adverts on popular social media channels, organisational partnerships (Enactus, AIESEC, Jade etc.) and ambassadors.

4.5. Data description and analysis

In the survey, mainly closed-ended questions are used. When an extensive list of options is offered, the option 'other' is included to give the students the possibility to express their opinion.
For this document, the following professional dimensions were analysed: career goals, soft skills and employer attributes.

Tables 7, 8 and Figure 8 summarise the questions asked in each section that were analysed.

Career goals

Table 7: Survey questions and potential answers related to career goals.

Question: Which of these career goals are most important to you?
Please select a maximum of 3 alternatives.
To be a technical or functional expert
To be a leader or manager of people
To be autonomous or independent
To be secure or stable in my job
To be entrepreneurial or creative/innovative
To be dedicated to a cause or to feel that I am serving a greater good
To be competitively or intellectually challenged
To have work/life balance
To have an international career

Soft Skills

Table 8: Survey questions and potential answers related to soft skills.

Question: How would you rate yourself in the following skills?
Reliability
Responsibility
Communication skills
Positive attitude
Team work
Problem-solving
Work ethic
Adaptability
Dedication
Integrity
Flexibility
Stress management
Time management

Employer attributes

In this question students are asked the following question:

Which of these are most important to you? Please, select a maximum 3 of alternatives

Figure 8: Survey questions and potential answers related to Employer Attractiveness

5.0 Results analyses

The main objective of this section is to present the results of the quantitative survey in order to answer to our research questions about the motivational factors and values of young people and adult learners' career choices.

Structure of the analysis results

The results are structured around the three main subjects of the quantitative survey consisting of students' career goals, needed skills and employer preferences. Findings are reported by comparing differences and similarities

- between engineering students' results,

- between male and female engineering students,

- between engineering and humanities students,

- between engineering students with different ages

in the focus countries (Finland, Sweden, Denmark, Belgium, France and Ireland).

5.1. Career goals

The analysis investigated the career goals of young students and adult learners to better understand the drivers of their career decisions. Understanding the factors driving their decisions will be an important consideration for the development of the new learning and teaching activity in order to make it more attractive and specifically adapted for a new generation of students.

5.1.1. Engineering students career goals

Engineering students career goals were compared in the six target countries (Belgium, Denmark, Finland, France, Ireland and Sweden).

Tables 9 and 10 show the results of engineering students career goals in percentages (meaning the percentage of students who chose this as one of their top three career goals) and the ranking positions. Figure 9 shows the percentages by country.

Table 9. Career goals choices of engineering students in each country and the average of these.

Engineering students - Career goals	BE	DK	FI	FR	IE	SE	**Aver.**
To be a leader or manager of people	41,7%	34,5%	31,9%	36,6%	30,2%	22,3%	**32,9%**
To be a technical or functional expert	35,5%	19,2%	40,6%	16,0%	28,3%	21,3%	**26,8%**
To be autonomous or independent	15,2%	12,4%	13,4%	18,6%	12,9%	24,9%	**16,2%**
To be competitively or intellectually challenged	33,0%	34,6%	30,3%	33,0%	26,2%	29,8%	**31,2%**
To be dedicated to a cause or to feel that I am serving a greater good	12,7%	45,2%	45,8%	43,9%	30,7%	32,2%	**35,1%**
To be entrepreneurial or creative/innovative	52,0%	27,1%	19,3%	25,2%	31,0%	33,7%	**31,4%**
To be secure or stable in my job	28,6%	36,8%	35,1%	25,4%	45,4%	44,5%	**36,0%**
To have an international career	25,9%	27,9%	18,4%	35,4%	25,2%	22,6%	**25,9%**
To have work/life balance	37,5%	47,5%	48,7%	53,6%	57,0%	47,9%	**48,7%**

Table 10. Ranked career goals of engineering students' choices. Dark red colour refers to the most important (1 - the highest ranked career goal) and dark green to the least important, the lowest ranked career goal.

Engineering students - career goals	BE	DK	FI	FR	IE	SE	Rank average
To be a leader or manager of people	2	5	5	3	5	8	4
To be a technical or functional expert	4	8	3	9	6	9	7
To be autonomous or independent	8	9	9	8	9	6	9
To be competitively or intellectually challenged	5	4	6	5	7	5	6
To be dedicated to a cause or to feel that I am serving a greater good	9	2	2	2	4	4	3
To be entrepreneurial or creative/innovative	1	7	7	7	3	3	5
To be secure or stable in my job	6	3	4	6	2	2	2
To have an international career	7	6	8	4	8	7	8
To have work/life balance	3	1	1	1	1	1	1

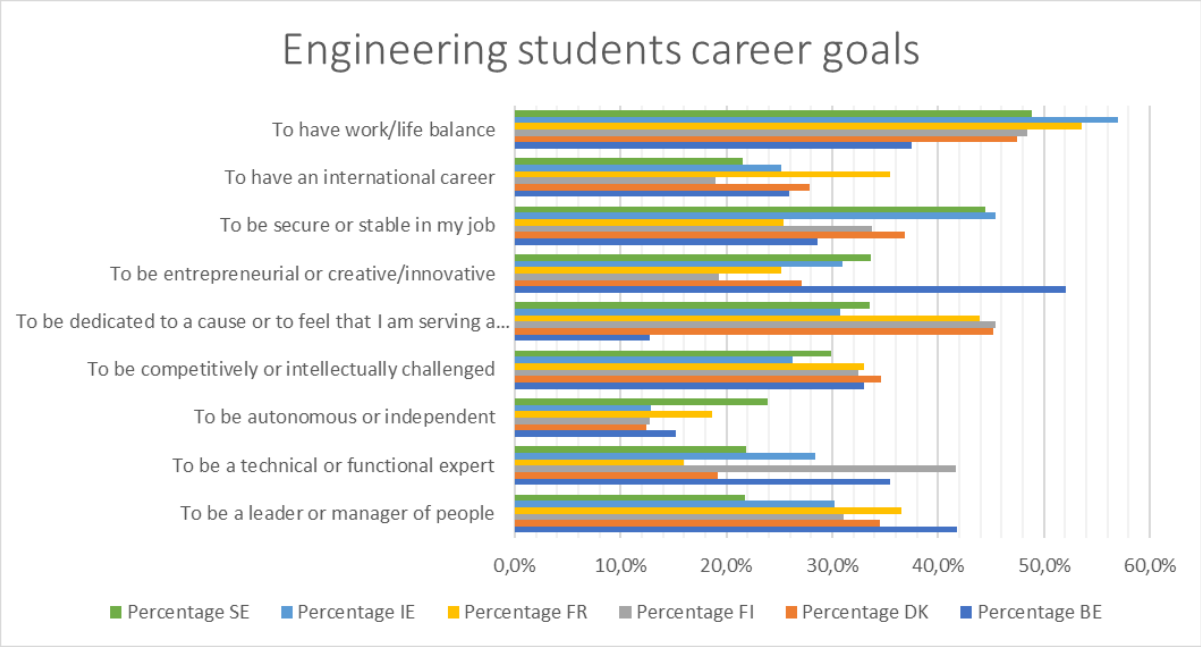

Figure 9. Career goals choices of engineering students in each country.

There is a clear convergence about the most important career goal: work-life balance was ranked by engineering students as their most important goal in five countries. According to these results, the engineering students consider not only their professional life as defining their future career plan but they have a holistic vision taking into account their professional and private life at the same time. Surprisingly, in Belgium the entrepreneurial mind-set with opportunities for innovation and creativity was top of the engineering student's ranking and work-life balance was in third place after leadership and management positions in second place.

The second most important career goal is to be dedicated to a good cause and a contribution to a greater good and this was ranked as the second most important goal in three countries (Denmark, Finland and France). It is interesting that in Ireland and Sweden job security and having a stable and permanent position was selected in second position. In Belgium, as noted earlier obtaining a leadership or

management role was ranked in second position. However, this result of Belgian engineering students could be linked to the fact they ranked entrepreneurship opportunities in first place.

Looking now at the less important career goals, three out of six countries selected working in an autonomous and independent way as being less important for engineering students. For Finnish, Swedish and Irish engineering students having the opportunity of an international career was not a motivating factor for their future career choices. It is surprising that for French engineering students the opportunity to become a technical and functional expert was selected as a career goal of low importance. However, the most surprising result is that Belgian engineering students consider working for a good cause as the least important motivation for their future careers. It is contradictory to the other countries who selected it amongst the most important career goals.

5.1.2. Comparison between male and female engineering students career goals

It is important to investigate gender differences between engineering students career goals and so the study also compared male and female engineering students in the six target countries. Responses to the selected career goals are indicated in Table 11, 12, 13 and 14.

Table 11. The importance of career goals to male engineering students. The percentage tells how many had put the career goal amongst the 3 most important ones.

MALE - Engineering	BE	DK	FI	FR	IE	SE	**Aver.**
To be a leader or manager of people	46,1%	40,5%	35,6%	39,7%	31,3%	24,5%	**36,3%**
To be a technical or functional expert	40,0%	24,5%	44,9%	18,1%	30,6%	29,2%	**31,2%**
To be autonomous or independent	14,5%	13,7%	14,0%	17,8%	13,7%	23,8%	**16,3%**
To be competitively or intellectually challenged	36,2%	37,7%	32,7%	35,0%	23,6%	33,1%	**33,0%**
To be dedicated to a cause or to feel that I am serving a greater good	9,9%	36,1%	39,5%	39,9%	27,5%	28,4%	**30,2%**
To be entrepreneurial or creative/innovative	48,4%	24,9%	20,4%	27,6%	32,4%	35,1%	**31,5%**
To be secure or stable in my job	26,4%	32,6%	30,2%	22,4%	47,2%	37,8%	**32,8%**
To have an international career	27,0%	31,3%	18,5%	35,6%	23,9%	23,9%	**26,7%**
To have work/life balance	33,3%	44,3%	44,9%	50,9%	54,6%	43,0%	**45,2%**

Table 12. The importance of career goals to female engineering students. The percentage tells how many had put the career goal amongst the 3 most important ones.

FEMALE - Engineering	BE	DK	FI	FR	IE	SE	**Aver**
To be a leader or manager of people	26,3%	23,8%	24,0%	30,1%	26,6%	18,5%	**24,9%**
To be a technical or functional expert	20,2%	10,0%	35,5%	11,3%	21,3%	12,1%	**18,4%**
To be autonomous or independent	18,2%	10,0%	9,4%	20,5%	9,6%	24,0%	**15,3%**
To be competitively or intellectually challenged	23,2%	29,3%	31,9%	27,9%	34,0%	25,7%	**28,7%**
To be dedicated to a cause or to feel that I am serving a greater good	22,2%	61,1%	55,9%	52,6%	40,4%	40,1%	**45,4%**
To be entrepreneurial or creative/innovative	64,6%	30,5%	17,2%	19,8%	25,5%	31,6%	**31,6%**
To be secure or stable in my job	35,4%	44,4%	39,7%	32,6%	41,5%	53,0%	**41,1%**
To have an international career	22,2%	22,2%	20,4%	35,3%	29,8%	18,6%	**24,7%**
To have work/life balance	53,5%	53,1%	54,8%	59,9%	63,8%	56,8%	**57,0%**

Table 13. The ranked career goals choices of male engineering students.

MALE - Engineering	BE	DK	FI	FR	IE	SE	Rank average
To be a leader or manager of people	2	2	4	3	4	7	2
To be a technical or functional expert	3	8	1	8	5	5	6
To be autonomous or independent	8	9	9	9	9	9	9
To be competitively or intellectually challenged	4	3	5	5	8	4	3
To be dedicated to a cause or to feel that I am serving a greater good	9	4	3	2	6	6	7
To be entrepreneurial or creative/innovative	1	7	7	6	3	3	5
To be secure or stable in my job	7	5	6	7	2	2	4
To have an international career	6	6	8	4	7	8	8
To have work/life balance	5	1	1	1	1	1	1

Table 14. The ranked career goals choices of female engineering students.

FEMALE - Engineering	BE	DK	FI	FR	IE	SE	Rank average
To be a leader or manager of people	4	6	6	5	6	8	6
To be a technical or functional expert	8	8	4	9	8	9	8
To be autonomous or independent	9	8	9	7	9	6	9
To be competitively or intellectually challenged	5	5	5	6	4	5	5
To be dedicated to a cause or to feel that I am serving a greater good	6	1	1	2	3	3	2
To be entrepreneurial or creative/innovative	1	4	8	8	7	4	4
To be secure or stable in my job	3	3	3	4	2	2	3
To have an international career	6	7	7	3	5	7	7
To have work/life balance	2	2	2	1	1	1	1

In regard to the most important career goals, there is an interesting difference between male and female engineering students in Denmark and Finland, where the most important goal for female students is not work-life balance but dedication to work for a good cause. However it should be noted that in these cases there is only a slight difference between the first and second ranked goal; that is work-life balance.

It is interesting to note, that for male engineering students, work-life balance is the most important career goal, with the exception of Belgian students as mentioned before. However, for female engineering students, there is a stronger response to the goal of being dedicated and working for a good cause compared to male engineering students in all target countries. In addition, job security and having a stable job is typically more important for female than for male engineering students with the exception of Irish and Swedish female engineering students.

In each target country, to become a technical or functional expert or to have a leadership and management position is significantly less important for female engineering students than for male engineering students. It should be noted that Irish female engineering students find competitively and intellectually challenging work a more important career motivation than male engineering students.

The next analysis looks at differences between male and female students' career choices in spider diagram (Figure 10). The percentage in Figure 10 and in Table 15 is calculated by the differences

between male and female engineering students career goals evaluation (Cf. : Table 11 and 12) where a minus figure indicates a higher importance for male and a positive figure indicates a higher importance for female engineering students

Table 15. Differences in percentages between male and female engineering students' career goals. A negative number indicates career goals that are more important for male engineering students and marked in red. A positive number indicates career goals that are more important for female engineering students and marked green. E.g. Belgium female "to be a leader or manager of people" 26,3% (Table 12) Belgium male to be a leader or manager of people" 46,1% (Table 11) = -19,8%.

FEMALE vs MALE diff.	BE	DK	FI	FR	IE	SE	**Aver.**
To be a leader or manager of people	-19,8%	-16,7%	-11,6%	-9,6%	-4,7%	-6,1%	-11,4%
To be a technical or functional expert	-19,8%	-14,6%	-9,4%	-6,8%	-9,4%	-17,1%	-12,8%
To be autonomous or independent	3,7%	-3,8%	-4,6%	2,6%	-4,2%	0,2%	-1,0%
To be competitively or intellectually challenged	-13,0%	-8,5%	-0,8%	-7,1%	10,5%	-7,4%	-4,4%
To be dedicated to a cause or to feel that I am serving a greater good	12,4%	25,0%	16,4%	12,7%	13,0%	11,7%	15,2%
To be entrepreneurial or creative/innovative	16,2%	5,6%	-3,2%	-7,8%	-6,9%	-3,5%	0,1%
To be secure or stable in my job	9,0%	11,8%	9,5%	10,1%	-5,7%	15,2%	8,3%
To have an international career	-4,7%	-9,1%	1,9%	-0,3%	5,8%	-5,3%	-2,0%
To have work/life balance	20,2%	8,7%	9,9%	9,1%	9,3%	13,8%	11,8%

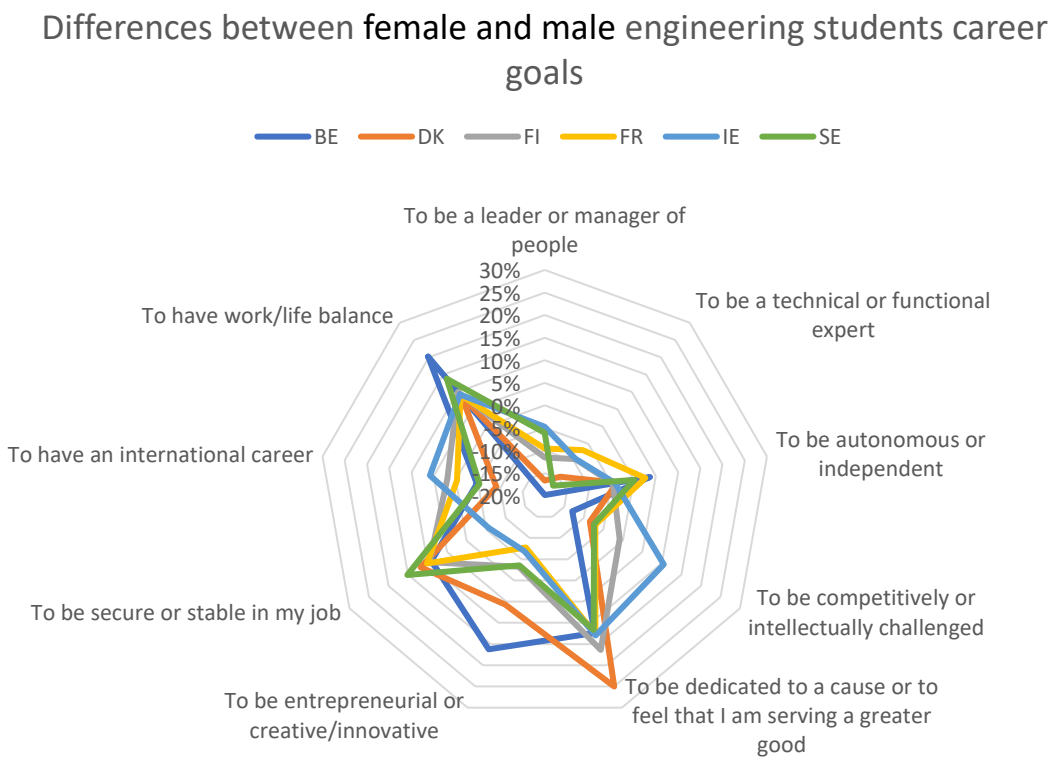

Figure 10. Differences between male and female engineering students' career goals.

As shown in Table 16, Belgian female engineering students selected entrepreneurship, innovation and creativity in addition to having a work-life balance as much more important than for male engineering students (+20.2% and +16.2%). On the opposite side, they allocate less importance to become a technical expert (-19.8%) or to have an opportunity for leadership (-19.8%).

In Denmark and Finland, female engineering students have a significantly higher career goal to work for good causes than male engineering students (+25% and +16.4%).

In Ireland, a key difference in male and female career goals is the selection of having competitive and challenging work, which is more important to female engineering students compared to male engineering students and is in contrast to other countries (+10.5%).

For Swedish female engineering students, having a secure and permanent job is particularly important (+15.2%) but they give lesser importance, similar to Belgian female engineering students, for the possibility to become a technical or functional expert.

5.1.3. Comparison between engineering and humanities students career goals

In this section the study compared the differences and convergences between engineering and humanities students' career goals in the six target countries in order to get better understanding about their career choices. The results are expressed in percentages in tables 17 and 18 and ranked in tables 19 and 20.

Table 16. Engineering students' career goals in each country. The percentage tells how many had put the career goal amongst the 3 most important ones.

Engineering students	BE	DK	FI	FR	IE	SE	**Aver.**
To be a leader or manager of people	41,7%	34,5%	31,0%	36,6%	30,2%	21,8%	**32,9%**
To be a technical or functional expert	35,5%	19,2%	41,7%	16,0%	28,3%	21,8%	**26,8%**
To be autonomous or independent	15,2%	12,4%	12,7%	18,6%	12,9%	23,9%	**16,2%**
To be competitively or intellectually challenged	33,0%	34,6%	32,4%	33,0%	26,2%	29,8%	**31,2%**
To be dedicated to a cause or to feel that I am serving a greater good	12,7%	45,2%	45,4%	43,9%	30,7%	33,5%	**35,1%**
To be entrepreneurial or creative/innovative	52,0%	27,1%	19,3%	25,2%	31,0%	33,6%	**31,4%**
To be secure or stable in my job	28,6%	36,8%	33,8%	25,4%	45,4%	44,4%	**36,0%**
To have an international career	25,9%	27,9%	18,9%	35,4%	25,2%	21,6%	**25,9%**
To have work/life balance	37,5%	47,5%	48,4%	53,6%	57,0%	48,8%	**48,7%**

Table 17. Humanities students' career goals in each country. The percentage tells how many had put the career goal amongst the 3 most important ones.

Humanities students	BE	DK	FI	FR	IE	SE	**Aver.**
To be a leader or manager of people	19,0%	19,6%	14,6%	32,6%	20,2%	16,3%	**20,4%**
To be a technical or functional expert	6,2%	4,1%	9,7%	13,2%	5,0%	5,7%	**7,3%**
To be autonomous or independent	22,9%	10,4%	17,9%	23,8%	12,4%	27,4%	**19,1%**
To be competitively or intellectually challenged	27,5%	34,5%	26,2%	34,5%	27,2%	29,4%	**29,9%**
To be dedicated to a cause or to feel that I am serving a greater good	46,8%	63,0%	73,0%	69,4%	53,5%	50,7%	**59,4%**
To be entrepreneurial or creative/innovative	44,7%	22,5%	19,1%	18,0%	23,9%	20,4%	**24,8%**
To be secure or stable in my job	42,6%	45,3%	44,7%	19,6%	58,1%	56,7%	**44,5%**
To have an international career	21,8%	26,3%	22,3%	41,1%	25,1%	21,5%	**26,4%**
To have work/life balance	51,5%	58,9%	57,0%	38,0%	62,5%	50,8%	**53,1%**

Table 18. The ranked position of engineering students' career goals in each country.

Engineering students - career goals	BE	DK	FI	FR	IE	SE	Rank average
To be a leader or manager of people	2	5	5	3	5	8	4
To be a technical or functional expert	4	8	3	9	6	9	7
To be autonomous or independent	8	9	9	8	9	6	9
To be competitively or intellectually challenged	5	4	6	5	7	5	6
To be dedicated to a cause or to feel that I am serving a greater good	9	2	2	2	4	4	3
To be entrepreneurial or creative/innovative	1	7	7	7	3	3	5
To be secure or stable in my job	6	3	4	6	2	2	2
To have an international career	7	6	8	4	8	7	8
To have work/life balance	3	1	1	1	1	1	1

Table 19. The ranked position of humanities students' career goals in each country.

Humanities students - career goals	BE	DK	FI	FR	IE	SE	Rank average
To be a leader or manager of people	8	7	8	5	7	8	7
To be a technical or functional expert	9	9	9	9	9	9	9
To be autonomous or independent	6	8	7	6	8	5	8
To be competitively or intellectually challenged	5	4	4	4	4	4	4
To be dedicated to a cause or to feel that I am serving a greater good	2	1	1	1	3	3	1
To be entrepreneurial or creative/innovative	3	6	6	8	6	7	6
To be secure or stable in my job	4	3	3	7	2	1	3
To have an international career	7	5	5	2	5	6	5
To have work/life balance	1	2	2	3	1	2	2

There is a significant difference between humanities and engineering students in the six target countries and this is particularly noticeable in the ranking of working for a good cause, which is much more

important to humanities students compared to engineering students. For humanities students, this goal is ranked first in three countries (Denmark, Finland and France), second in Belgium and third in Ireland and Sweden. Work-life balance makes the top 3 rank in each targeted country but on average in second place, contrary to engineering students for whom this is the most important career goal. With the exception of French humanities students, in all target countries, having a stable and permanent position was evaluated as a more important career goal for humanities students than for engineering students.

Concerning the less important career goals, Tables 19 and 20 show an interesting divergence between engineering and humanities students. For engineering students, having independent and autonomous work was selected at the lowest level of importance for students in three of the six target countries. For humanities students however, becoming a technical and functional expert was unanimously selected as the lowest rank for students in all targeted countries. Humanities students typically ranked opportunity to have a management or leadership position as the second least important goal. This finding also shows that for humanities students, entrepreneurship is a significantly less important career goal compared to engineering students.

The next analysis looks at differences between humanities and engineering students' career choices in diagrammatical form. The percentage in Figure 10 and in Table 21 is calculated by comparing engineering and humanities students career choices (Cf.: Tables 17 and 18) where a negative figure indicates a higher importance for engineering students and a positive figure indicates a higher importance for humanities students.

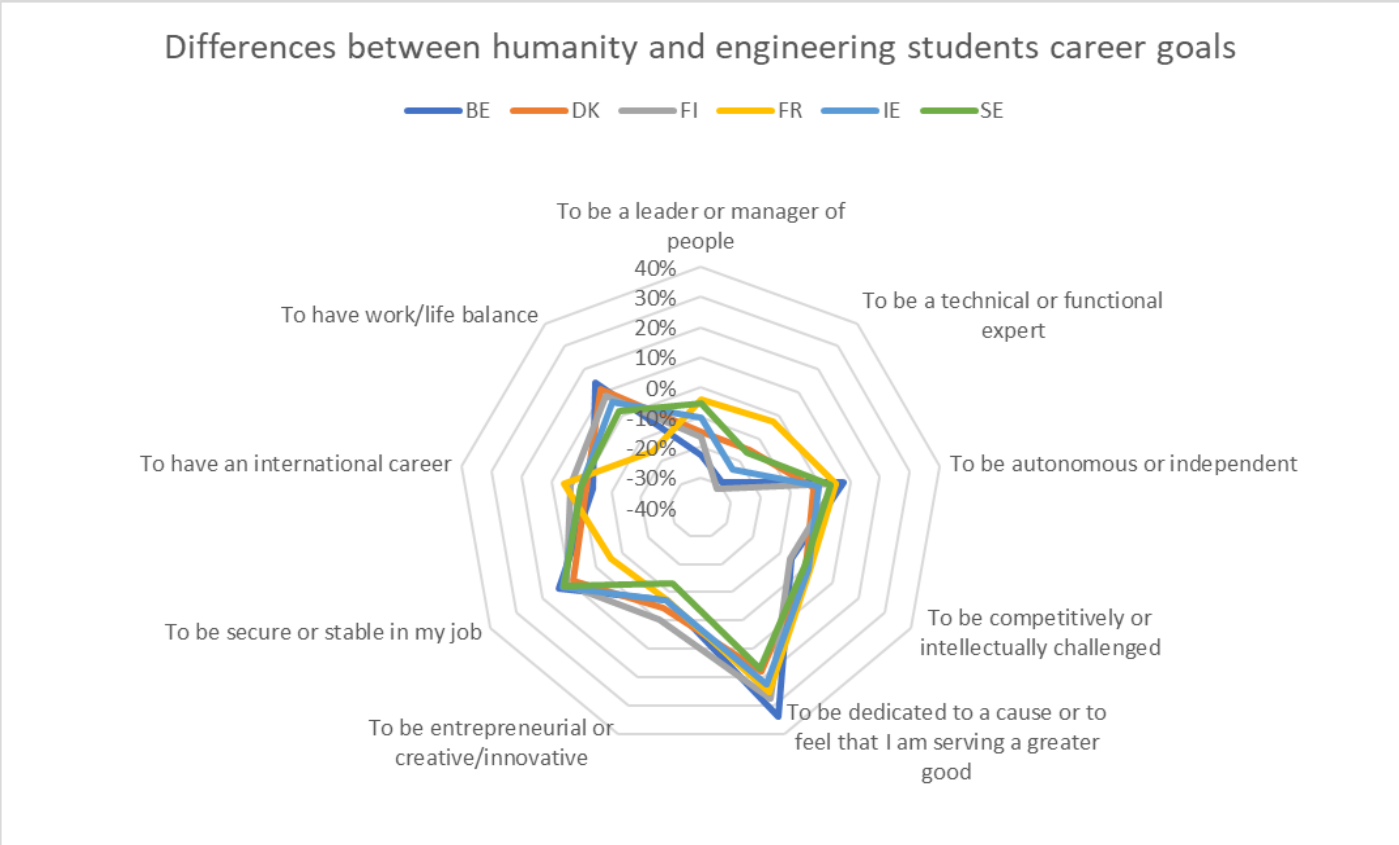

Figure 11. Differences between humanities and engineering students' career goals. The difference is humanities students' percentage - engineering students' percentage.

Table 20. Differences between engineering and humanities students' career goals. The percentage in the table is engineering students' percentage - humanities students' percentage.

Engineering vs Humanities differences	BE	DK	FI	FR	IE	SE	Average
To be a leader or manager of people	22,8%	14,9%	17,3%	4,0%	10,0%	5,9%	**12,5%**
To be a technical or functional expert	29,3%	15,1%	30,9%	2,8%	23,4%	15,6%	**19,5%**
To be autonomous or independent	-7,7%	2,1%	-4,5%	-5,2%	0,4%	-2,6%	**-2,9%**
To be competitively or intellectually challenged	5,5%	0,1%	4,1%	-1,5%	-1,0%	0,4%	**1,3%**
To be dedicated to a cause or to feel that I am serving a greater good	-34,1%	-17,8%	-27,2%	-25,4%	-22,8%	-18,5%	**-24,3%**
To be entrepreneurial or creative/innovative	7,3%	4,5%	0,1%	7,2%	7,0%	13,3%	**6,6%**
To be secure or stable in my job	-14,1%	-8,5%	-9,6%	5,8%	-12,7%	-12,2%	**-8,5%**
To have an international career	4,1%	1,5%	-4,0%	-5,7%	0,1%	1,0%	**-0,5%**
To have work/life balance	-14,0%	-11,4%	-8,2%	15,5%	-5,5%	-2,9%	**-4,4%**

As shown in Table 20, Finnish humanities students selected entrepreneurship, innovation and creativity as equally important as engineering students (+0.1%). In France, humanities students gave significantly less importance to work-life balance than engineering students (+15.5%). For Irish, Swedish and Danish humanities students, the opportunity of having an international career has the same importance as for engineering students (0.1%, +1.0% and +1.5%).

5.1.4. Comparison between engineering students career goals with different ages

This section presents an intergenerational comparison of engineering students' career goals between generation Z and Y. Generation Z means students at the age of 17 - 22 years today. The results of their career goals are in table 22. Generation Y means students at the age of 23 - 28 today and their career goals are in table 23. Table 24 expresses the differences between these two.

Table 21. The career goals of generation Z in each country. The percentage tells how many had put the career goal amongst the 3 most important ones.

GEN Z (today at the age of 17-22 years)							
Career goals	BE	DK	FI	FR	IE	SE	Average
To be a leader or manager of people	44,2%	38,1%	35,4%	36,5%	27,2%	25,2%	34,4%
To be a technical or functional expert	32,9%	15,3%	41,5%	14,4%	26,0%	22,7%	25,5%
To be autonomous or independent	13,6%	14,6%	9,7%	18,3%	13,0%	20,8%	15,0%
To be competitively or intellectually challenged	31,6%	31,3%	30,5%	31,8%	23,2%	31,3%	30,0%
To be dedicated to a cause or to feel that I am serving a greater good	12,6%	48,9%	46,4%	44,8%	29,5%	33,4%	35,9%
To be entrepreneurial or creative/innovative	54,5%	26,5%	22,3%	26,0%	29,9%	37,7%	32,8%
To be secure or stable in my job	30,9%	39,9%	31,3%	26,8%	53,9%	40,7%	37,3%
To have an international career	26,2%	26,1%	18,5%	37,4%	24,8%	24,6%	26,3%
To have work/life balance	34,9%	44,0%	46,7%	52,2%	58,7%	42,7%	46,5%

Table 22. The career goals of generation Y in each country. The percentage tells how many had put the career goal amongst the 3 most important ones.

GEN Y (today at the age of 23-38 years)							
Career goals	BE	DK	FI	FR	IE	SE	Average
To be a leader or manager of people	36,7%	33,0%	29,8%	36,8%	34,7%	21,4%	32,1%
To be a technical or functional expert	40,8%	20,9%	41,8%	18,5%	33,9%	22,2%	29,7%
To be autonomous or independent	18,4%	11,3%	13,9%	18,9%	12,9%	22,0%	16,2%
To be competitively or intellectually challenged	36,1%	36,2%	33,4%	34,8%	32,3%	34,3%	34,5%
To be dedicated to a cause or to feel that I am serving a greater good	12,9%	43,4%	44,8%	42,6%	33,9%	37,1%	35,8%
To be entrepreneurial or creative/innovative	46,9%	27,7%	17,6%	24,0%	33,9%	32,0%	30,4%
To be secure or stable in my job	23,8%	35,2%	35,0%	23,5%	27,4%	39,6%	30,7%
To have an international career	25,2%	28,9%	19,2%	32,4%	26,6%	22,7%	25,8%
To have work/life balance	42,9%	48,9%	49,4%	55,6%	53,2%	51,1%	50,2%

Table 23. The career goals differences between generation z and y in each country. The positive number refers to that the goal is more important to GEN Z than to GEN Y and it is marked green. The minus number refers to that the goal is more important to GEN Y than to GEN Z and it is marked red. The percentage in the table is GEN Z students' percentage - GEN Y students' percentage.

GEN Z / GEN Y difference							
Career goals	BE	DK	FI	FR	IE	SE	Average
To be a leader or manager of people	7,5%	5,1%	5,5%	-0,4%	-7,5%	3,8%	2,3%
To be a technical or functional expert	-7,9%	-5,6%	-0,2%	-4,1%	-7,9%	0,5%	-4,2%
To be autonomous or independent	-4,7%	3,3%	-4,2%	-0,6%	0,1%	-1,2%	-1,2%
To be competitively or intellectually challenged	-4,5%	-4,9%	-2,9%	-3,0%	-9,0%	-3,0%	-4,6%
To be dedicated to a cause or to feel that I am serving a greater good	-0,3%	5,5%	1,6%	2,1%	-4,3%	-3,8%	0,1%
To be entrepreneurial or creative/innovative	7,5%	-1,2%	4,7%	2,0%	-4,0%	5,7%	2,5%
To be secure or stable in my job	7,1%	4,7%	-3,7%	3,4%	26,5%	1,2%	6,5%
To have an international career	1,1%	-2,8%	-0,8%	4,9%	-1,8%	1,9%	0,4%
To have work/life balance	-8,0%	-4,9%	-2,7%	-3,4%	5,4%	-8,4%	-3,6%

According to this analysis, to have a secure and permanent job shows a significant difference between generations. It is more important for the young generation (+6.5%), compared to their older colleagues in all target countries with the exception of France.

The following differences were also observed between engineering students of generation Z and Y at national level:

- In Belgium, engineering students of generation Z, appreciate more opportunities for leadership (+7.5%) and to be in an entrepreneurial and innovative working environment (+7.5%) with a stable permanent position (+7.1%) than their older classmates. On the opposite side, they give less importance to their work-life balance (-8.0%) and having opportunities to become a technical expert (-7.9%).
- In Ireland, for the young generation Z, having a stable and safe job is much more important (+26.5%) than for students from the older generation. These young students place less value on having a competitively and intellectually challenging job (-9.0%), the opportunities to become a technical or functional expert (-7.9%) or for leadership (-7.5%).

- In Sweden, young engineering students, similar to Belgian students, indicate less appreciation for work-life balance (-8.4%) and give more importance to working in an entrepreneurial and innovative work environment (+5.7%) than the older generation.

Despite Gen Y consider work-life balance less important, work-life balance still remains the most important career goal (46.5%) for engineering students in Generation Z. Students from this young generation would like to work in a secure and stable position (37.3%) and be dedicated to a good cause with the feeling of serving society (35.9%).

5.2. Soft skills

This section presents the results of the survey concerning students' perception of their strongest soft skills in addition to the soft skills that they believe need improvement.

5.2.1. Students soft skills perception

Engineering students perception of their strongest soft skills

Engineering students in target countries (BE=Belgium, DK=Denmark, FI=Finland, FR=France, IE=Ireland, SE= Sweden and the average is the average of these 6 countries) were asked to answer the question:

- Which soft skills do you consider yourself strongest in (to select max. 3 alternatives)?
- What are the soft skills that you should improve (to select max 3 alternatives)?

The following results in Table 25 were found. The percentage value is calculated by engineering students' answers (the percentage represents the percentage of students who selected a skill as their top three) and the ranking indicates their perception about their strongest skills.

Table 24. Engineering students' perception about their strongest soft skills

Soft skills - Strong	BE	DK	FI	FR	IE	SE	**Average**
Adaptability	27,6%	29,4%	35,2%	42,7%	31,8%	32,5%	**33,2%**
Communication	20,4%	19,3%	19,5%	20,1%	23,2%	18,3%	**20,1%**
Flexibility	30,8%	25,1%	32,7%	21,3%	15,9%	21,9%	**24,6%**
Integrity	7,2%	11,8%	23,3%	22,5%	13,7%	7,5%	**14,3%**
Positive attitude	44,8%	33,3%	41,8%	44,1%	35,2%	39,8%	**39,8%**
Problem-solving	52,3%	51,5%	45,3%	24,1%	53,6%	55,9%	**47,1%**
Responsibility	45,2%	47,8%	43,9%	46,2%	30,7%	45,3%	**43,2%**
Team work	33,7%	34,5%	27,2%	40,3%	37,7%	24,3%	**32,9%**
Time management	13,8%	9,9%	11,8%	16,9%	16,8%	14,1%	**13,9%**
Work ethic	14,5%	32,9%	12,8%	17,7%	37,4%	34,2%	**24,9%**

Table 25. Engineering students' perception about their strongest soft skills (ranked from strongest (1) to the weakest (10) skills)

Engineering Students	BE	DK	FI	FR	IE	SE	Average
Adaptability	6	6	4	3	5	5	4
Communication	7	8	8	8	7	8	8
Flexibility	5	7	5	7	9	7	7
Integrity	10	9	7	6	10	10	9
Positive attitude	3	4	3	2	4	3	3
Problem-solving	1	1	1	5	1	1	1
Responsibility	2	2	2	1	6	2	2
Team work	4	3	6	4	2	6	5
Time management	9	10	10	10	8	9	10
Work ethic	8	5	9	9	3	4	6

As the results indicate, engineering students in all target countries (except in France) consider themselves to be good at problem-solving. In France, engineering students think that their strongest skill is responsibility, which is the second strongest skill selected in Belgium, Denmark, Finland and Sweden. In these four countries the first and second strongest skills are the same. Similarly, in the third rank position positive attitude is selected in Belgium, Finland and Sweden. Positive attitude was also ranked in second position in France but appeared fourth in Ireland. In Ireland, teamwork was the second strongest skill and work ethic the third. French engineering students ranked their adaptability in third position. In summary, in all these countries, engineering students perceive that their strongest soft skill is that they are good at problem-solving, they are responsible and they have a positive attitude.

Comparison between male and female engineering students' strongest soft skills

A comparative analysis of male and female engineering students was also undertaken to better understand gender differences regarding their perception of their strongest soft skills.

The following results in Tables 26 - 29 were found.

Table 26. Male engineering students' perception about their strongest soft skills.

MALE Strongest soft skills	BE	DK	FI	FR	IE	SE	**Average**
Adaptability	31,4%	31,6%	38,9%	42,3%	31,8%	35,4%	**35,2%**
Communication	18,8%	16,4%	18,0%	20,8%	23,6%	16,9%	**19,1%**
Flexibility	32,8%	24,4%	31,0%	23,1%	17,1%	24,1%	**25,4%**
Integrity	8,4%	13,6%	29,4%	22,0%	15,7%	8,4%	**16,2%**
Positive attitude	43,5%	32,3%	39,3%	44,8%	34,7%	35,5%	**38,4%**
Problem-solving	58,0%	58,9%	48,9%	27,6%	56,4%	61,7%	**51,9%**
Responsibility	41,0%	43,9%	40,2%	42,8%	29,2%	40,7%	**39,6%**
Team work	31,1%	32,5%	25,7%	40,2%	35,7%	26,9%	**32,0%**
Time management	12,0%	8,2%	9,1%	14,8%	15,7%	10,3%	**11,7%**
Work ethic	14,5%	32,6%	13,4%	17,1%	35,4%	33,3%	**24,4%**

Table 27. Female engineering students' perception about their strongest soft skills.

FEMALE Strongest soft skills	BE	DK	FI	FR	IE	SE	Average
Adaptability	25,0%	26,7%	31,8%	43,8%	35,9%	29,2%	**32,1%**
Communication	26,8%	20,8%	17,8%	20,1%	27,6%	20,0%	**22,2%**
Flexibility	31,5%	26,7%	32,6%	16,7%	11,0%	17,9%	**22,8%**
Integrity	9,1%	7,6%	14,9%	23,2%	11,0%	7,0%	**12,1%**
Positive attitude	43,8%	37,5%	45,1%	42,7%	34,5%	44,5%	**41,3%**
Problem-solving	41,3%	37,5%	43,0%	17,4%	51,7%	48,2%	**39,8%**
Responsibility	48,2%	57,0%	50,9%	52,6%	35,2%	53,4%	**49,6%**
Team work	32,2%	33,8%	26,0%	38,8%	42,1%	19,3%	**32,0%**
Time management	19,2%	11,5%	17,8%	21,6%	17,9%	20,3%	**18,1%**
Work ethic	13,4%	37,8%	15,4%	19,5%	31,0%	35,2%	**25,4%**

Table 28. Male engineering students' perception about their ranked strongest soft skills.

Soft skills – Strong - Male	BE	DK	FI	FR	IE	SE	Average
Adaptability	5	6	4	3	5	4	4
Communication	7	8	8	8	7	8	8
Flexibility	4	7	5	6	8	7	6
Integrity	10	9	6	7	9	10	9
Positive attitude	2	5	3	1	4	3	3
Problem-solving	1	1	1	5	1	1	1
Responsibility	3	2	2	2	6	2	2
Team work	6	4	7	4	2	6	5
Time management	9	10	10	10	9	9	10
Work ethic	8	3	9	9	3	5	7

Table 29. Female engineering students' perception about their ranked strongest soft skills.

Soft skills – Strong - Female	BE	DK	FI	FR	IE	SE	Average
Adaptability	7	6	5	2	3	5	4
Communication	6	8	7	7	7	7	8
Flexibility	5	6	4	10	9	9	7
Integrity	10	10	10	5	9	10	10
Positive attitude	2	3	2	3	5	3	2
Problem-solving	3	3	3	9	1	2	3
Responsibility	1	1	1	1	4	1	1
Team work	4	5	6	4	2	8	5
Time management	8	9	7	6	8	6	9
Work ethic	9	2	9	8	6	4	6

An important difference was observed between male and female students concerning their perception of their strongest soft skills:

- Male engineering students declared, (except French engineering students), that their strongest soft skill is problem solving. For them, their capacity to be responsible is in second place in all

targeted countries except Ireland and Belgium. They also feel a strong positive attitude for their professional work.

- On the contrary, female engineering students, in all target countries except Ireland, consider that their strongest soft skill is their capacity to be responsible. In second place, female engineering students viewed themselves as having a strong positive attitude.

- However, there are also some disparities between the targeted countries:
  - in Denmark work ethic is very important,
  - in France adaptability is viewed by female engineering students as the second strongest soft skill and
  - in Ireland, female engineering students perceived team-working as their second strongest soft skill.
  - In third place, female engineering students perceived their high level of problem solving, with the only exception being French female engineering students.

In figure 12 and in table 30 the differences in male and female perceptions are presented for each soft skill.

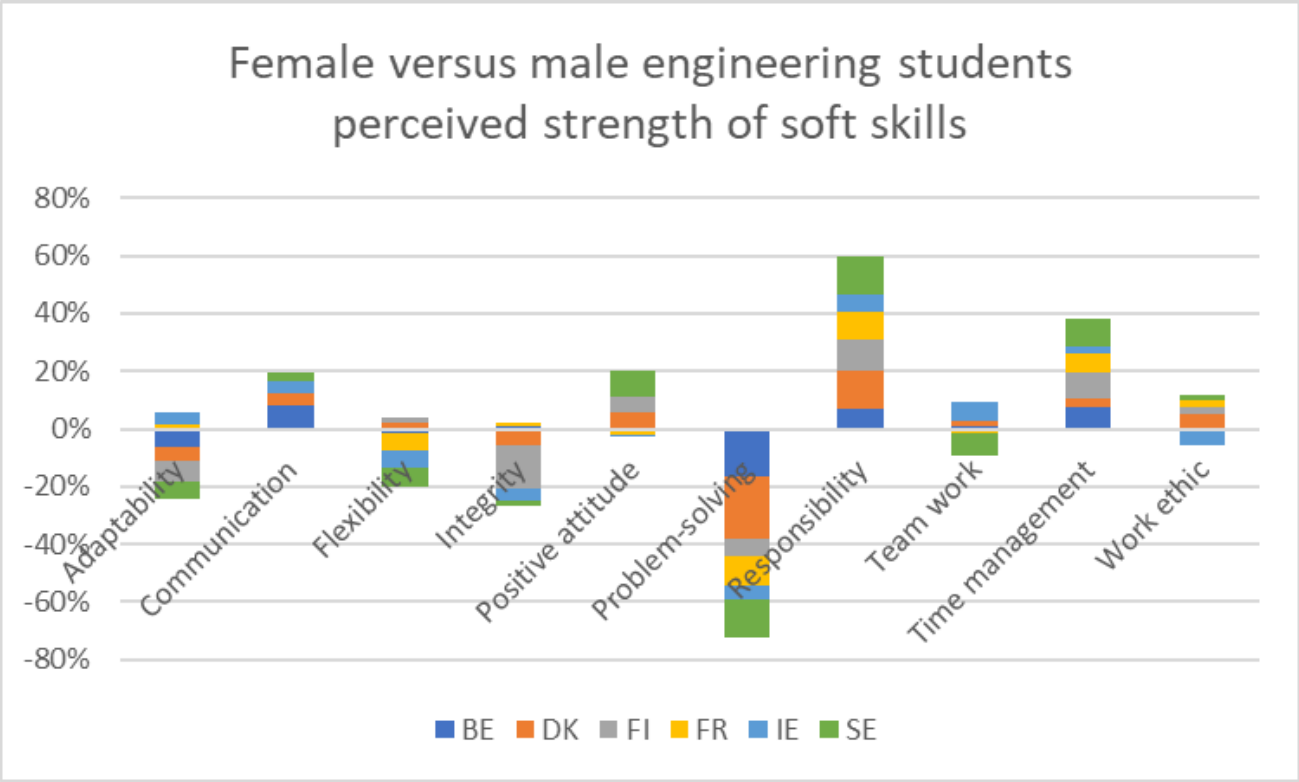

Figure 12. Female versus male engineering students' perceived strength of soft skills.

Table 30. Female versus male engineering students' difference of perceived strongest soft skills

FEMALE vs MALE	Rank						
Soft skills - Strong	BE	DK	FI	FR	IE	SE	Average
Adaptability	-2	0	-1	1	2	-1	0
Communication	1	0	1	1	0	1	0
Flexibility	-1	1	1	-4	-1	-2	-1
Integrity	0	-1	-4	2	0	0	-1
Positive attitude	0	2	1	-2	-1	0	1
Problem-solving	-2	-2	-2	-4	0	-1	-2
Responsibility	2	1	1	1	2	1	1
Team work	2	-1	1	0	0	-2	0
Time management	1	1	3	4	1	3	1
Work ethic	-1	1	0	1	-3	1	1

In conclusion, significant differences between female and male engineering students' perception of their strongest soft skills were observed. In problem-solving, male engineering students perceive high abilities compared to female students, especially in France. About responsibility and time management there is also a difference between female and male engineering students in that, female students believe they have high ability compared to male students.

Comparison between engineering and humanities students' strongest perceived soft skills

In this subsection, the differences and convergences between engineering and humanities students' perception of their strong soft skills are compared, in order to better understand their expectations for their education and work.

The following results in Table 31 and 32 were found.

Table 31. Humanities students' perceived strongest soft skills.

HUMANITIES Strong Skills	BE	DK	FI	FR	IE	SE	**Average**
Adaptability	24,6%	26,3%	34,6%	52,7%	29,6%	31,6%	**33,2%**
Communication	32,5%	39,2%	29,1%	19,6%	39,1%	28,7%	**31,4%**
Flexibility	31,2%	18,9%	29,6%	16,3%	14,9%	21,9%	**22,1%**
Integrity	17,3%	14,9%	18,5%	24,7%	16,2%	14,3%	**17,7%**
Positive attitude	48,4%	40,7%	44,1%	42,9%	48,1%	41,2%	**44,2%**
Problem-solving	33,0%	30,5%	32,9%	19,1%	27,6%	38,0%	**30,2%**
Responsibility	51,9%	53,4%	45,8%	56,9%	37,0%	50,4%	**49,2%**
Team work	28,1%	28,3%	28,3%	24,9%	28,8%	17,2%	**25,9%**
Time management	12,4%	5,7%	14,5%	14,5%	15,7%	12,9%	**12,6%**
Work ethic	16,0%	38,8%	20,2%	24,5%	40,7%	38,2%	**29,7%**

Table 32. Humanities students' ranked perceived strongest soft skills.

	BE	DK	FI	FR	IE	SE	Average
Adaptability	7	7	3	2	5	5	3
Communication	4	3	6	7	3	6	4
Flexibility	5	8	5	9	10	7	8
Integrity	8	9	9	5	8	9	9
Positive attitude	2	2	2	3	1	2	2
Problem-solving	3	5	4	8	7	4	5
Responsibility	1	1	1	1	4	1	1
Team work	6	6	7	4	6	8	7
Time management	10	10	10	10	9	10	10
Work ethic	9	4	8	6	2	3	6

Humanities students in all studied countries except for Ireland, think that their strongest soft skill is responsibility. In Ireland the strongest soft skill among humanities students is positive attitude, which is also ranked in second place in Belgium, Denmark, Finland and Sweden. In France it is in third position. The second skill ranked by humanities students in France is adaptability. All humanities students in all these countries think that they are very responsible, have a positive attitude and are quite adaptive.

All humanities students in target countries also considered that time management is their weaker soft skill. Integrity is declared as their second weakest soft skill just before flexibility. This finding is quite surprising as it was assumed that integrity may be more important to humanities students who are highly dedicated to work for a good cause.

Comparing engineering and humanities students, the differences between perceived strongest soft skills provided the following results (Table 33, figure 13, Table 34). A positive number indicates those skills where engineering students' percentage is bigger than humanities students' percentage and a negative number indicates where those where humanities students' percentage in bigger than engineering students' percentage.

Table 33. Engineering versus humanities students' differences of perceived strongest soft skills.

Engineering/Humanities students differences							
Soft skills - Strong	BE	DK	FI	FR	IE	SE	**Average**
Adaptability	3,0%	3,2%	0,5%	-10,0%	2,3%	0,9%	**0,0%**
Communication	-12,2%	-20,0%	-9,6%	0,6%	-15,9%	-10,4%	**-11,3%**
Flexibility	-0,4%	6,2%	3,1%	5,0%	1,0%	0,0%	**2,5%**
Integrity	-10,0%	-3,1%	4,8%	-2,2%	-2,6%	-6,8%	**-3,3%**
Positive attitude	-3,6%	-7,4%	-2,3%	1,2%	-12,9%	-1,4%	**-4,4%**
Problem-solving	19,2%	21,0%	12,4%	5,0%	26,1%	17,9%	**16,9%**
Responsibility	-6,7%	-5,6%	-1,9%	-10,7%	-6,3%	-5,1%	**-6,1%**
Team work	5,6%	6,2%	-1,1%	15,4%	8,9%	7,1%	**7,0%**
Time management	1,4%	4,2%	-2,7%	2,4%	1,0%	1,2%	**1,2%**
Work ethic	-1,5%	-5,9%	-7,4%	-6,8%	-3,2%	-3,9%	**-4,8%**

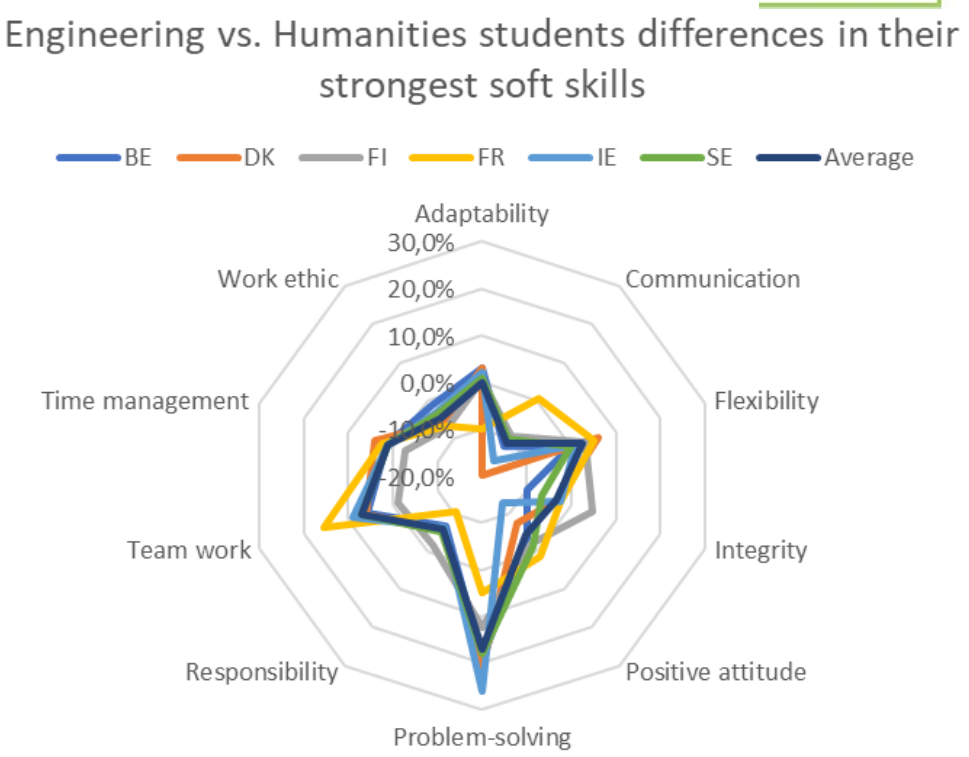

Figure 13. Engineering versus humanities students' differences in their perceptions about their strongest soft skills.

Table 34. Engineering versus humanities differences in their perceptions about their strongest soft skills.

Engineering/Humanities diff.	Rank						
Soft skills - Strong	BE	DK	FI	FR	IE	SE	**Average**
Adaptability	1	1	-1	-1	0	0	**-1**
Communication	-3	-5	-2	-1	-4	-2	**-4**
Flexibility	0	1	0	2	1	0	**1**
Integrity	-2	0	2	-1	-2	-1	**0**
Positive attitude	-1	-2	-1	1	-3	-1	**-1**
Problem-solving	2	4	3	3	6	3	**4**
Responsibility	-1	-1	-1	0	-2	-1	**-1**
Team work	2	3	1	0	4	2	**2**
Time management	1	0	0	0	1	1	**0**
Work ethic	1	-1	-1	-3	-1	-1	**0**

The most obvious difference between engineering and humanities students' strongest soft skills are in the areas of problem-solving and in communication. Engineering students feel that they are good in problem-solving and weak in communication and humanities students feel that they are strong in communication and weak in problem-solving. Teamwork also shows differences; where humanities students believe they are good at teamwork, engineering students think that this is an area where they could improve.

There were some divergences observed between French students and target countries. Contrary to the other countries, French engineering and humanities students indicate the same perceived ability in communication (0.6%) and positive attitude (1.2%). Furthermore, French engineering students perceive that they have a higher level of teamwork skills (15.4%) compared to engineering students in other countries. Irish engineering students considered their level of problem solving significantly higher (+26.1%) than Irish humanities students. Finally, Danish engineering students perceived their communication skills significantly lesser (-20.0%) than Danish humanities students.

5.2.2. Students' need for soft skills' improvement

Engineering students' perceived soft skills' improvement

In this sub section, engineering students' perceptions of their soft skills that should be improved were analysed. The results are collated in tables 36 and 37.

Table 35. Engineering students' perceptions of their soft skills that should be improved.

Engineering students	BE	DK	FI	FR	IE	SE	**Average**
Adaptability	22,0%	22,3%	16,1%	11,7%	26,0%	17,8%	**19,3%**
Communication	49,5%	50,1%	46,8%	55,9%	42,7%	46,8%	**48,6%**
Flexibility	15,7%	17,2%	13,3%	18,2%	24,6%	21,3%	**18,4%**
Integrity	14,5%	16,7%	15,1%	8,0%	11,6%	18,7%	**14,1%**
Positive attitude	14,3%	17,2%	12,9%	18,7%	19,8%	16,2%	**16,5%**
Problem-solving	19,6%	28,6%	32,0%	25,0%	23,2%	25,4%	**25,6%**
Responsibility	20,1%	23,7%	13,6%	18,3%	22,3%	14,9%	**18,8%**
Team work	24,8%	24,2%	27,5%	29,8%	24,6%	24,8%	**25,9%**
Time management	57,2%	49,2%	59,1%	56,1%	52,3%	46,8%	**53,4%**
Work ethic	19,6%	20,8%	17,4%	12,3%	21,2%	12,4%	**17,3%**

Table 36. The ranking of the perceptions of engineering students' soft skills that should be improved.

	BE	DK	FI	FR	IE	SE	Average Rank
Adaptability	4	6	6	9	3	7	5
Communication	2	1	2	2	2	1	2
Flexibility	8	8	9	7	4	5	7
Integrity	9	10	7	10	10	6	10
Positive attitude	10	8	10	5	9	8	9
Problem-solving	6	3	3	4	6	3	4
Responsibility	5	5	8	6	7	9	6
Team work	3	4	4	3	4	4	3
Time management	1	2	1	1	1	2	1
Work ethic	6	7	5	8	8	10	8

In all target countries, time management and communication were the two most important soft skills that engineering students felt that they should improve. Team work and problem solving appeared in third place without any remarkable differences between countries. It is surprising that problem-solving appears in third place as students had also previously declared it as their strongest soft skill. Engineering students chose integrity, flexibility and work ethic as those skills which required less improvement. This result is surprising as engineering students had previously declared integrity and time management as their weakest skills.

Comparison between male and female engineering students perceived soft skills improvement

The next section describes the gender differences between engineering students' perception of their soft skills needing improvement. The results are shown in Tables 37 - 40.

Table 37. Male engineering students' perception of their soft skills' improvement.

MALE Soft skills Improve	BE	DK	FI	FR	IE	SE	**Average**
Adaptability	20,10%	20,60%	15,40%	11,40%	28,10%	16,00%	**18,60%**
Communication	48,30%	50,90%	48,90%	56,00%	43,20%	48,80%	**49,30%**
Flexibility	15,40%	15,30%	14,20%	17,40%	23,50%	20,20%	**17,70%**
Integrity	13,50%	15,50%	12,20%	8,80%	13,40%	17,80%	**13,50%**
Positive attitude	14,40%	17,30%	15,00%	17,20%	17,00%	16,20%	**16,20%**
Problem-solving	16,40%	25,60%	29,40%	22,00%	23,50%	23,30%	**23,30%**
Responsibility	21,20%	24,50%	16,00%	20,20%	21,60%	17,70%	**20,20%**
Team work	25,60%	23,30%	26,80%	30,40%	23,70%	24,70%	**25,80%**
Time management	60,90%	52,30%	58,10%	58,20%	50,80%	51,80%	**55,40%**
Work ethic	21,60%	23,50%	19,10%	13,30%	24,70%	15,40%	**19,60%**

Table 38. Female engineering students' perception of their soft skills' improvement.

FEMALE Soft skills improve.	BE	DK	FI	FR	IE	SE	**Average**
Adaptability	23,0%	25,0%	19,5%	12,7%	24,5%	18,7%	**20,6%**
Communication	40,0%	45,2%	47,1%	55,5%	37,8%	45,2%	**45,1%**
Flexibility	13,3%	18,5%	12,8%	19,3%	31,5%	24,4%	**20,0%**
Integrity	11,9%	15,5%	18,2%	6,0%	11,9%	19,9%	**13,9%**
Positive attitude	17,8%	18,1%	13,9%	22,7%	23,1%	15,7%	**18,6%**
Problem-solving	28,5%	37,2%	34,0%	31,1%	26,6%	28,5%	**31,0%**
Responsibility	20,0%	22,1%	7,5%	14,2%	19,6%	11,1%	**15,8%**
Team work	29,3%	27,1%	29,4%	29,0%	25,2%	26,9%	**27,8%**
Time management	51,5%	40,8%	57,0%	51,9%	57,3%	40,1%	**49,8%**
Work ethic	17,0%	16,2%	11,0%	9,6%	13,3%	8,9%	**12,7%**

Table 39. Ranking of the soft skills' improvement of male engineering students.

Soft skills - Improve	BE	DK	FI	FR	IE	SE	Average
Adaptability	6	7	7	9	3	9	7
Communication	2	2	2	2	2	2	2
Flexibility	8	10	9	6	6	5	8
Integrity	10	9	10	10	10	6	10
Positive attitude	9	8	8	7	9	8	9
Problem-solving	7	3	3	4	6	4	4
Responsibility	5	4	6	5	8	7	5
Team work	3	6	4	3	5	3	3
Time management	1	1	1	1	1	1	1
Work ethic	4	5	5	8	4	10	6

Table 40. Ranking of the soft skills' improvement of female engineering students.

	BE	DK	FI	FR	IE	SE	Average
Adaptability	5	5	5	8	6	7	5
Communication	2	1	2	1	2	1	2
Flexibility	9	7	8	6	3	5	6
Integrity	10	10	6	10	10	6	9
Positive attitude	7	8	7	5	7	8	7
Problem-solving	4	3	3	3	4	3	3
Responsibility	6	6	10	7	8	9	8
Team work	3	4	4	4	5	4	4
Time management	1	2	1	2	1	2	1
Work ethic	8	9	9	9	9	10	10

As Tables 39 and 40 show, there is no significant differences between male and female engineering students' perception of soft skills improvement in first and second place: they think that they should improve their time management skills (1st) and their communications skills (2nd).

However, there is a minor difference between female and male engineering students in third place:

- female engineering students think, that they should improve their skills is problem-solving in third position and teamwork in fourth.

- male engineering students rank teamwork in third and problem solving in fourth.

We can conclude that male and female engineering students have very similar perceived needs for the soft skills which require improvement.

Comparison between engineering and humanities students' perception about their soft skills improvement

This section compares the differences and convergences between engineering and humanities students' perception of their weak soft skills in the six target countries, in order to better understand their expectations for their education and work. The results are shown in Tables 42 - 45. The percentage value is the percentag of students sho selected that particular skill as one of their top three.

Table 41. Humanities students' perception of their weak soft skills.

HUMANITIES							
Soft skills - Improve	BE	DK	FI	FR	IE	SE	**Average**
Adaptability	20,9%	22,2%	20,8%	7,4%	27,8%	18,4%	**19,6%**
Communication	36,7%	34,0%	36,4%	44,7%	32,7%	36,1%	**36,7%**
Flexibility	16,8%	22,8%	14,4%	19,9%	24,4%	21,9%	**20,0%**
Integrity	12,5%	13,3%	18,0%	7,5%	16,1%	22,0%	**14,9%**
Positive attitude	19,5%	18,2%	17,2%	23,8%	17,4%	15,2%	**18,5%**
Problem-solving	26,8%	35,2%	37,2%	19,3%	36,5%	29,7%	**30,8%**
Responsibility	16,9%	18,1%	12,2%	14,8%	20,1%	11,3%	**15,6%**
Team work	32,4%	27,6%	23,1%	39,9%	25,9%	25,4%	**29,0%**
Time management	56,0%	44,8%	63,3%	55,9%	51,2%	45,5%	**52,8%**
Work ethic	13,7%	17,5%	8,7%	10,9%	13,9%	9,9%	**12,4%**

Table 42. Ranking of the humanities students' perception of their weak soft skills.

	BE	DK	FI	FR	IE	SE	Average
Adaptability	5	6	5	10	4	7	6
Communication	2	3	3	2	3	2	2
Flexibility	8	5	8	5	6	6	5
Integrity	10	10	6	9	9	5	9
Positive attitude	6	7	7	4	8	8	7
Problem-solving	4	2	2	6	2	3	3
Responsibility	7	8	9	7	7	9	8
Team work	3	4	4	3	5	4	4
Time management	1	1	1	1	1	1	1
Work ethic	9	9	10	8	10	10	10

In all target countries, humanities students feel that the most important thing for them to improve is time management. This result seems to be coherent with the previous responses as time management was also considered as one of the weakest soft skill for humanities students. Communication and problem-solving appeared in second and third place as the skills that humanities students considered should be improved.

Humanities students think that work ethic and integrity are the soft skills which require the least improvement. This result is at a discord with their previous response, which noted that integrity was considered as their weakest soft skill after time management.

Table 43. Engineering versus humanities students' differences of their perceptions of their weak soft skills.

Engineering/Humanities diff.							
Soft skills - Improve	BE	DK	FI	FR	IE	SE	**Average**
Adaptability	1,0%	0,1%	-4,7%	4,3%	-1,8%	-0,6%	**-0,3%**
Communication	12,9%	16,2%	10,4%	11,2%	9,9%	10,7%	**11,9%**
Flexibility	-1,1%	-5,6%	-1,1%	-1,8%	0,1%	-0,6%	**-1,7%**
Integrity	2,0%	3,4%	-2,9%	0,6%	-4,5%	-3,3%	**-0,8%**
Positive attitude	-5,2%	-1,0%	-4,3%	-5,1%	2,4%	1,1%	**-2,0%**
Problem-solving	-7,1%	-6,5%	-5,2%	5,7%	-13,3%	-4,3%	**-5,1%**
Responsibility	3,2%	5,6%	1,4%	3,5%	2,2%	3,6%	**3,2%**
Team work	-7,6%	-3,4%	4,4%	-10,1%	-1,3%	-0,5%	**-3,1%**
Time management	1,2%	4,3%	-4,3%	0,2%	1,1%	1,3%	**0,6%**
Work ethic	6,0%	3,2%	8,7%	1,3%	7,3%	2,5%	**4,8%**

Table 44. Ranking of the differences of engineering versus humanities students' perceptions of their weak soft skills.

Engineering/Humanities diff.	Rank						
Soft skills - Improve	BE	DK	FI	FR	IE	SE	**Average**
Adaptability	1	0	-1	1	1	0	**1**
Communication	0	2	1	0	1	1	**0**
Flexibility	0	-3	-1	-2	2	1	**-2**
Integrity	1	0	-1	-1	-1	-1	**-1**
Positive attitude	-4	-1	-3	-1	-1	0	**-2**
Problem-solving	-2	-1	-1	2	-4	0	**-1**
Responsibility	2	3	1	1	0	0	**2**
Team work	0	0	0	0	1	0	**1**
Time management	0	-1	0	0	0	-1	**0**
Work ethic	3	2	5	0	2	0	**2**

There is no difference between engineering and humanities students' willingness to improve their time management and communication skills. Even though humanities students feel that they are quite strong in communication, they still want to improve those skills. Teamwork is also a key skill which both student groups wish to improve.

Comparison between engineering students' strong soft skills with different ages

This section compares the differences and convergences between GEN Z and GEN Y engineering students' perception of their strong and weak soft skills in the six target countries. (GEN Z means here the students at a current age of 17 - 23 years and GEN Y means the students at a current age of 23 - 38 years). The results of GEN Z perceptions of their strongest soft skills are in Table 45, the results of GEN Z in the Table 46 and differences between these in Table 47.

Table 45. Perception of their strongest soft skills of GEN Z.

GEN Z (today at the age of 17-22 years)							
Soft skills - Strong	BE	DK	FI	FR	IE	SE	Average
Adaptability	24,6%	31,4%	34,9%	40,2%	31,9%	33,4%	32,8%
Communication	21,8%	20,3%	18,3%	20,2%	21,4%	17,4%	19,9%
Flexibility	33,8%	26,1%	28,6%	20,7%	13,4%	16,6%	23,2%
Integrity	6,1%	9,6%	22,5%	22,6%	14,7%	7,4%	13,8%
Positive attitude	43,0%	29,9%	45,2%	45,9%	35,3%	38,4%	39,6%
Problem-solving	52,6%	52,5%	45,5%	22,3%	51,7%	61,0%	47,6%
Responsibility	45,1%	48,3%	46,8%	47,1%	34,5%	49,4%	45,2%
Team work	35,8%	33,0%	25,4%	39,2%	37,8%	20,3%	31,9%
Time management	13,7%	10,3%	14,0%	18,4%	16,8%	16,8%	15,0%
Work ethic	13,0%	35,2%	11,9%	18,4%	39,1%	32,1%	25,0%

Table 46. Perception of their strongest soft skills of GEN Y.

GEN Y (today at the age of 23-38 years)							
Soft skills - Strong	BE	DK	FI	FR	IE	SE	Average
Adaptability	33,6%	28,8%	37,6%	46,5%	32,5%	33,3%	35,4%
Communication	17,5%	19,1%	17,6%	20,0%	26,5%	18,8%	19,9%
Flexibility	24,8%	25,0%	32,7%	22,0%	21,4%	21,9%	24,6%
Integrity	9,4%	12,3%	24,7%	22,4%	11,1%	9,3%	14,9%
Positive attitude	48,3%	34,8%	39,6%	41,4%	35,0%	37,6%	39,5%
Problem-solving	51,7%	50,8%	47,9%	26,8%	57,3%	58,8%	48,9%
Responsibility	45,6%	47,5%	42,4%	44,5%	23,1%	44,4%	41,3%
Team work	29,5%	35,3%	26,6%	41,8%	38,5%	26,2%	33,0%
Time management	14,1%	9,7%	11,0%	14,7%	15,4%	12,7%	12,9%
Work ethic	17,5%	32,2%	15,1%	16,7%	34,2%	31,8%	24,6%

Table 47. GEN Z versus GEN Y perception of their strongest soft skills.

GEN Z / GEN Y difference							
Soft skills - Strong	BE	DK	FI	FR	IE	SE	Average
Adaptability	-9,0%	2,6%	-2,7%	-6,3%	-0,5%	0,1%	-2,6%
Communication	4,4%	1,2%	0,7%	0,2%	-5,1%	-1,3%	0,0%
Flexibility	9,0%	1,0%	-4,1%	-1,2%	-7,9%	-5,3%	-1,4%
Integrity	-3,3%	-2,7%	-2,2%	0,2%	3,6%	-1,9%	-1,0%
Positive attitude	-5,3%	-4,9%	5,6%	4,5%	0,3%	0,9%	0,2%
Problem-solving	0,9%	1,7%	-2,4%	-4,4%	-5,6%	2,2%	-1,3%
Responsibility	-0,6%	0,7%	4,4%	2,6%	11,4%	5,0%	3,9%
Team work	6,3%	-2,3%	-1,2%	-2,6%	-0,6%	-5,8%	-1,0%
Time management	-0,4%	0,6%	3,0%	3,7%	1,4%	4,1%	2,1%
Work ethic	-4,5%	3,1%	-3,2%	1,8%	4,9%	0,3%	0,4%

Generally it can be noted that there are not significant differences between younger and older engineering students' perceptions of their strong soft skills. Some small differences were noted however. The younger generation think that they are more responsible than older students (+3.9%) and their time management skills are better (+2.1%). On the other hand, older students from Generation Y perceived themselves as more adaptable (-2.6%) than younger students.

Furthermore, when looking at each specific country, the following generational differences between the surveyed engineering students were noted:

- In Belgium, engineering students from the older Generation Y are much more adaptable (-9.0%) with a higher positive attitude (-5.3%) but less flexible (+9.0%) and weaker in teamwork (+6.3%) compared to Generation Z.
- In Ireland, older students think they are more flexible than their younger classmates (-7.9%) and younger students think that they are much more responsible (+11.4%).
- In Sweden, older students consider themselves to be better in teamwork skills (-5.8%),

The following Tables 48 - 50 show the skills that engineering students would like to improve differentiated by generation:

Table 48. Soft skills, that engineering students of GEN Z would like to improve.

GEN Z (today at the age of 17-22 years)							
Soft skills - Improve	BE	DK	FI	FR	IE	SE	Average
Adaptability	22,8%	20,1%	17,2%	13,5%	24,5%	17,5%	19,3%
Communication	49,5%	45,0%	48,3%	55,0%	42,6%	45,4%	47,6%
Flexibility	15,3%	18,9%	16,4%	18,9%	20,7%	21,7%	18,7%
Integrity	17,1%	15,7%	18,3%	8,3%	12,2%	14,3%	14,3%
Positive attitude	13,9%	20,1%	14,6%	18,2%	19,4%	15,6%	17,0%
Problem-solving	19,2%	27,7%	31,3%	23,9%	24,9%	25,1%	25,4%
Responsibility	20,3%	27,3%	15,1%	18,3%	22,4%	14,6%	19,7%
Team work	23,8%	30,1%	31,3%	31,9%	26,6%	29,6%	28,9%
Time management	56,2%	45,4%	49,6%	55,9%	52,7%	47,3%	51,2%
Work ethic	18,9%	22,9%	19,4%	11,9%	21,9%	16,4%	18,6%

Table 59. Soft skills, that engineering students of GEN Y would like to improve.

GEN Y (today at the age of 23-38 years)							
Soft skills - Improve	BE	DK	FI	FR	IE	SE	Average
Adaptability	20,4%	23,3%	15,8%	8,9%	28,9%	17,6%	19,1%
Communication	49,7%	52,4%	48,3%	57,2%	43,0%	48,8%	49,9%
Flexibility	16,3%	16,5%	11,8%	17,1%	33,3%	23,1%	19,7%
Integrity	9,5%	17,2%	12,7%	7,7%	10,5%	20,5%	13,0%
Positive attitude	15,0%	15,9%	15,2%	19,4%	19,3%	15,7%	16,8%
Problem-solving	20,4%	29,1%	30,0%	26,7%	19,3%	24,7%	25,0%
Responsibility	19,7%	22,4%	11,9%	18,4%	22,8%	14,6%	18,3%
Team work	26,5%	21,9%	25,9%	26,6%	20,2%	24,0%	24,2%
Time management	59,2%	50,6%	62,4%	56,4%	51,8%	47,8%	54,7%
Work ethic	21,1%	20,1%	14,9%	12,7%	20,2%	11,3%	16,7%

Table 50. GEN Z versus GEN Y differences of their perceptions of their weak soft skills. A positive number indicates that GEN Z percentages are that much bigger than GEN Y percentages and a negative number indicates that GEN Y percentages are bigger than GEN Z percentages.

GEN Z / GEN Y difference							
Soft skills - Improve	BE	DK	FI	FR	IE	SE	Average
Adaptability	2,4%	-3,2%	1,5%	4,6%	-4,5%	-0,1%	0,1%
Communication	-0,2%	-7,4%	0,0%	-2,2%	-0,4%	-3,5%	-2,3%
Flexibility	-1,0%	2,4%	4,7%	1,8%	-12,7%	-1,3%	-1,0%
Integrity	7,6%	-1,5%	5,6%	0,6%	1,7%	-6,2%	1,3%
Positive attitude	-1,1%	4,1%	-0,6%	-1,2%	0,1%	-0,2%	0,2%
Problem-solving	-1,2%	-1,4%	1,3%	-2,8%	5,6%	0,4%	0,3%
Responsibility	0,6%	4,9%	3,2%	-0,1%	-0,4%	0,0%	1,4%
Team work	-2,7%	8,2%	5,4%	5,2%	6,4%	5,7%	4,7%
Time management	-3,0%	-5,2%	-12,8%	-0,5%	1,0%	-0,5%	-3,5%
Work ethic	-2,2%	2,8%	4,5%	-0,8%	1,8%	5,1%	1,8%

This result also shows that there are not significant differences between younger and older engineering students with regard to the soft skills they wish to improve.

The most important difference is in team work, where younger engineering students in all countries, (with the exception of Belgium), think that they should improve their team work skills (+4.7%) compared to older students. On the contrary, time management was typically less important to improve for younger engineering students in all target countries.

The following differences were observed at national level in the target countries:

- In Finland, for older students, the improvement of their time management skills appears to be much more important than for their younger colleagues (-12.8%).
- In Ireland, for older students the improvement of their flexibility skills is much more important compared to younger students (-12.7%).
- In Denmark, for engineering students from Generation Z, the improvement of their teamwork skills is more important (+8.2%) and communication skills is less important (-7.4%) than for older students.
- In Belgium and in Finland, the improvement of integrity is more important for younger students (+7.6% and +5.6 %). However, in Sweden, the opposite is observed where integrity improvement is more important for older students (-6.2%).

5.3. Attractive employer attributes

This research question relates to a question in the survey about what type of employer the student would like to work for. Male and female engineering students and humanities students were asked to select the three most important issues for them from the following employer attributes. Results are analyzed from all engineering students, and separately for male and female engineering students and humanities students. Differences between male and female engineering students are analyzed as well as the differences between engineering and humanities students' results.

5.3.1. Engineering students' attractive employer attributes

The results of attractive employer attributes for engineering students are shown in Tables 51 and 52.

Table 51. Engineering students' attractive employer attributes

Attractive employer attributes	BE	DK	FI	FR	IE	SE	Aver.
A creative and dynamic work environment	46,6%	48,6%	34,0%	42,8%	41,8%	53,9%	44,6%
Challenging work	50,2%	36,0%	23,9%	55,0%	29,0%	43,5%	39,6%
Commitment to diversity and inclusion	7,1%	9,5%	11,5%	9,6%	9,5%	16,7%	10,7%
Competitive base salary	33,8%	42,8%	50,0%	41,3%	37,5%	32,9%	39,7%
Corporate Social Responsibility	16,4%	18,4%	17,2%	18,1%	11,7%	18,6%	16,7%
Embracing new technologies	45,6%	40,6%	38,0%	25,1%	42,3%	26,8%	36,4%
Encouraging work-life balance	20,6%	25,4%	30,6%	32,4%	41,9%	33,1%	30,7%
Ethical standards	11,0%	20,3%	23,6%	29,5%	26,0%	18,6%	21,5%
Innovation	53,2%	41,3%	39,6%	45,9%	50,8%	38,6%	44,9%
Inspiring purpose	20,1%	37,7%	25,3%	34,6%	28,2%	42,8%	31,4%
Interaction with international clients and colleagues	23,0%	28,4%	17,6%	24,4%	16,9%	21,8%	22,0%
Professional training and development	40,6%	42,9%	40,3%	31,5%	44,7%	45,0%	40,8%
Respect for its people	37,7%	37,7%	39,6%	28,7%	34,6%	37,3%	35,9%
Sponsorship of future education	28,2%	25,2%	19,5%	23,5%	23,1%	20,6%	23,3%
Support for gender equality	19,2%	23,1%	23,9%	27,3%	16,9%	29,4%	23,3%

Table 52. Ranking of attractive employer attributes of engineering students

	BE	DK	FI	FR	IE	SE	Rank of Average
A creative and dynamic work environment	3	1	6	3	5	1	2
Challenging work	2	8	9	1	8	3	5
Commitment to diversity and inclusion	15	15	15	15	15	15	15
Competitive base salary	7	3	1	4	6	8	4
Corporate Social Responsibility	13	14	14	14	14	14	14
Embracing new technologies	4	5	5	11	3	10	6
Encouraging work-life balance	10	10	7	6	4	7	9
Ethical standards	14	13	11	8	10	13	13
Innovation	1	4	3	2	1	5	1
Inspiring purpose	11	7	8	5	9	4	8
Interaction with international clients and colleagues	9	9	13	12	12	11	12
Professional training and development	5	2	2	7	2	2	3
Respect for its people	6	6	4	9	7	6	7
Sponsorship of future education	8	11	12	13	11	12	10
Support for gender equality	12	12	10	10	13	9	11

The tables above show that engineering students generally appreciate innovation, creative and dynamic work environments and professional training and development in their workplace. This result compares well with their career goals as entrepreneurship, innovation and creativity were selected as important for engineering students' future career perspectives.

In all studied countries, commitment to diversity and inclusion was the least important employer attribute and corporate social responsibility was not recognized as important either. This is a surprising result as engineering students declared that dedication to work for a good cause was the second most important of their career goals.

There are also some divergences between target countries;

- Finnish engineering students' requirement for a competitive base salary ranks highly,
- French and Belgian engineering students' appreciation for a challenging work environment,
- Swedish engineering students need for an inspiring purpose.

5.3.2. Comparison between male & female engineering students' attractive employer attributes

Table 53 and 54 presents the results for male and female engineering students and Table 55 the differences between these in the six target countries.

Table 53. Male engineering students' attractive employer attributes

MALE - Engineering - attractive employer attributes	BE	DK	FI	FR	IE	SE	Average
A creative and dynamic work environment	45,3%	47,8%	33,5%	43,1%	41,9%	52,1%	44,0%
Challenging work	51,1%	38,3%	30,2%	56,9%	31,6%	47,7%	42,6%
Commitment to diversity and inclusion	6,8%	9,1%	10,7%	8,4%	8,3%	11,7%	9,1%
Competitive base salary	37,2%	45,3%	50,7%	44,5%	41,1%	35,3%	42,4%
Corporate Social Responsibility	14,4%	15,6%	14,6%	16,7%	11,3%	13,8%	14,4%
Embracing new technologies	47,2%	44,1%	40,3%	27,4%	43,3%	33,1%	39,2%
Encouraging work-life balance	19,5%	23,6%	30,2%	30,9%	39,7%	30,3%	29,0%
Ethical standards	10,5%	16,3%	17,3%	25,3%	22,6%	15,4%	17,9%
Innovation	53,2%	45,1%	39,7%	47,9%	50,1%	43,5%	46,6%
Inspiring purpose	17,8%	32,3%	24,8%	32,9%	25,5%	39,3%	28,8%
Interaction with international clients and colleagues	22,6%	28,3%	17,9%	22,5%	16,9%	22,7%	21,8%
Professional training & development	41,6%	42,5%	37,6%	29,6%	44,9%	47,3%	40,6%
Respect for its people	37,0%	35,1%	36,0%	26,9%	35,1%	33,2%	33,9%
Sponsorship of future education	27,2%	26,6%	18,1%	23,1%	21,5%	20,7%	22,9%
Support for gender equality	12,5%	12,5%	11,7%	18,1%	10,5%	16,8%	13,7%

The main difference between male responses and the engineering students as a whole is that male engineering students' position challenging work in third place instead of professional training and development. Commitment to diversity and inclusion was the least important selection which matches the results of all engineers, and support for gender equality was the second least important attribute selected by male engineers for their work environment. Male Finnish engineers kept competitive base salary as the most important thing in the work environment.

Table 54. Female engineering students' attractive employer attributes

Female - Engineering - attractive employer attributes	BE	DK	FI	FR	IE	SE	Average
A creative and dynamic work environment	52,4%	50,4%	37,1%	42,3%	40,6%	54,3%	46,2%
Challenging work	46,0%	32,6%	18,7%	50,2%	21,9%	38,4%	34,6%
Commitment to diversity and inclusion	7,9%	9,1%	12,5%	12,0%	13,4%	23,5%	13,1%
Competitive base salary	21,0%	38,4%	48,1%	33,5%	25,5%	30,4%	32,8%
Corporate Social Responsibility	23,9%	22,8%	25,1%	20,8%	12,8%	25,4%	21,8%
Embracing new technologies	40,1%	34,7%	34,8%	19,7%	39,8%	18,4%	31,3%
Encouraging work-life balance	25,7%	28,1%	29,6%	35,7%	47,3%	39,1%	34,3%
Ethical standards	12,9%	26,9%	34,6%	39,2%	34,8%	22,3%	28,4%
Innovation	52,9%	34,4%	39,4%	41,4%	52,5%	33,0%	42,3%
Inspiring purpose	29,9%	47,7%	28,7%	38,6%	35,9%	47,3%	38,0%
Interaction with international clients and colleagues	24,2%	29,0%	16,9%	29,2%	16,6%	20,1%	22,7%
Professional training and development	36,9%	43,8%	41,9%	36,3%	43,6%	42,7%	40,9%
Respect for its people	40,7%	42,5%	43,4%	32,8%	32,9%	42,4%	39,1%
Sponsorship of future education	32,1%	23,0%	18,4%	24,7%	27,1%	20,4%	24,3%
Support for gender equality	45,6%	41,6%	46,1%	49,0%	35,5%	45,9%	43,9%

Female engineering students selected a creative and dynamic work environment as the most important work attribute. Innovation, which was the most important for male engineering students, appeared in third position for females. Female engineering students selected support for gender equality as the second most important employer attribute, while it was the second least important issue for male engineers. Commitment to diversity and inclusion was selected as the least important employer attribute whilst corporate social responsibility was the second least important.

Table 55. Female versus male engineering students' attractive employer attributes

ENGINEERING - Female vs male attributes	BE	DK	FI	FR	IE	SE	Average
A creative and dynamic work environment	7,2%	2,6%	3,6%	-0,8%	-1,3%	2,2%	2,2%
Challenging work	-5,0%	-5,7%	-11,5%	-6,7%	-9,6%	-9,3%	-8,0%
Commitment to diversity and inclusion	1,1%	0,1%	1,8%	3,6%	5,1%	11,8%	3,9%
Competitive base salary	-16,2%	-7,0%	-2,6%	-11,1%	-15,6%	-5,0%	-9,6%
Corporate Social Responsibility	9,4%	7,2%	10,5%	4,1%	1,5%	11,6%	7,4%
Embracing new technologies	-7,1%	-9,4%	-5,5%	-7,6%	-3,6%	-14,7%	-8,0%
Encouraging work-life balance	6,2%	4,5%	-0,6%	4,8%	7,6%	8,8%	5,2%
Ethical standards	2,5%	10,6%	17,3%	13,9%	12,2%	6,9%	10,6%
Innovation	-0,3%	-10,7%	-0,2%	-6,5%	2,4%	-10,5%	-4,3%
Inspiring purpose	12,1%	15,4%	4,0%	5,7%	10,4%	8,0%	9,3%
Interaction with international clients and colleagues	1,5%	0,6%	-1,0%	6,7%	-0,2%	-2,6%	0,8%
Professional training and development	-4,7%	1,4%	4,2%	6,7%	-1,3%	-4,7%	0,3%
Respect for its people	3,6%	7,4%	7,4%	5,8%	-2,2%	9,2%	5,2%
Sponsorship of future education	4,8%	-3,5%	0,4%	1,6%	5,5%	-0,3%	1,4%
Support for gender equality	33,0%	29,1%	34,4%	30,8%	25,0%	29,1%	30,3%

The most significant difference between male and female engineering students' attribute is in their expectations about support for gender equality. In all studied countries female engineering students ranked this very highly (2nd place) yet for male students it was not important at all (14th place).

Generally male engineering students saw competitive base salary as more important than females did, except in Finland, where both male and female engineering students selected it as the most important work attribute.

Male engineering students appreciate challenging work and embracing new technologies much more than female engineering students.

Inspiring purpose was more important for female students than for male students except in Finland and France, where men ranked this work attribute slightly higher than women.

5.3.3. Comparison between engineering and humanities students' attractive employer attributes

This section compares the differences and convergences between engineering and humanities students' attractive employer attributes in the six target countries. Results for humanities students' attractive employer attributes are shown in Tables 56 and 57.

Table 56. Humanities students' attractive employer attributes.

Humanities students –attractive employer attributes	BE	DK	FI	FR	IE	SE	Average
A creative and dynamic work environment	52,9%	52,0%	43,7%	40,5%	42,0%	53,1%	47,4%
Challenging work	49,2%	33,9%	20,3%	60,2%	25,8%	41,3%	38,4%
Commitment to diversity and inclusion	29,6%	17,6%	16,7%	26,1%	27,1%	34,0%	25,2%
Competitive base salary	23,4%	34,7%	48,9%	36,4%	24,8%	25,2%	32,2%
Corporate Social Responsibility	36,3%	45,9%	36,6%	27,2%	19,5%	38,5%	34,0%
Embracing new technologies	16,0%	12,3%	12,7%	11,8%	18,2%	7,0%	13,0%
Encouraging work-life balance	25,3%	29,1%	30,6%	26,7%	38,5%	33,0%	30,5%
Ethical standards	45,1%	40,6%	49,5%	52,8%	49,0%	37,9%	45,8%
Innovation	27,6%	20,8%	31,7%	26,8%	33,4%	17,5%	26,3%
Inspiring purpose	45,3%	58,1%	47,7%	53,8%	52,9%	70,0%	54,6%
Interaction with international clients and colleagues	19,6%	25,2%	20,2%	27,2%	16,9%	20,2%	21,6%
Professional training and development	35,4%	38,7%	33,4%	20,8%	45,4%	43,9%	36,3%
Respect for its people	49,9%	38,4%	49,2%	26,7%	49,5%	45,0%	43,1%
Sponsorship of future education	32,1%	18,0%	19,3%	20,9%	24,8%	21,4%	22,8%
Support for gender equality	47,9%	37,4%	44,6%	43,1%	31,8%	43,0%	41,3%

Table 57. Ranking of humanities students' attractive employer attributes

	BE	DK	FI	FR	IE	SE	Rank of Average
A creative and dynamic work environment	1	2	6	5	5	2	2
Challenging work	3	9	11	1	10	6	6
Commitment to diversity and inclusion	10	14	14	12	9	9	12
Competitive base salary	13	8	3	6	12	11	9
Corporate Social Responsibility	7	3	7	8	13	7	8
Embracing new technologies	15	15	15	15	14	15	15
Encouraging work-life balance	12	10	10	10	6	10	10
Ethical standards	6	4	1	3	3	8	3
Innovation	11	12	9	9	7	14	11
Inspiring purpose	5	1	4	2	1	1	1
Interaction with international clients and colleagues	14	11	12	7	15	13	14
Professional training and development	8	5	8	14	4	4	7
Respect for its people	2	6	2	11	2	3	4
Sponsorship of future education	9	13	13	13	11	12	13
Support for gender equality	4	7	5	4	8	5	5

Inspiring purpose was the most important work attribute for humanities students in Denmark, Ireland and Sweden. It appeared in second place in France. French humanities students ranked challenging work and Finnish humanities students ranked ethical standards in first place. Generally, a creative and dynamic work environment was the second most important attribute and ethical standards the third. Embracing new technologies is understandably the least important issue for humanities students. Perhaps somewhat surprising is that interaction with international clients and colleagues was ranked the second least important work attribute for humanities students. Engineering students' attractive employer attributes versus humanities students' attractive employer attributes are shown in table 59.

Table 58. Engineering students' attractive employer attributes versus humanities students' attractive employer attributes.

Engineering/Humanities attributes diff.	BE	DK	FI	FR	IE	SE	Aver.
A creative and dynamic work environment	-6,3%	-3,4%	-9,7%	2,4%	-0,2%	0,8%	-2,7%
Challenging work	1,0%	2,1%	3,7%	-5,2%	3,2%	2,2%	1,2%
Commitment to diversity & inclusion	-22,5%	-8,1%	-5,2%	-16,6%	-17,6%	-17,3%	-14,5%
Competitive base salary	10,4%	8,1%	1,1%	4,9%	12,7%	7,7%	7,5%
Corporate Social Responsibility	-19,9%	-27,5%	-19,5%	-9,1%	-7,8%	-19,9%	-17,3%
Embracing new technologies	29,7%	28,3%	25,3%	13,3%	24,1%	19,8%	23,4%
Encouraging work-life balance	-4,7%	-3,7%	0,1%	5,7%	3,4%	0,2%	0,2%
Ethical standards	-34,1%	-20,3%	-25,9%	-23,3%	-23,0%	-19,3%	-24,3%
Innovation	25,5%	20,6%	8,0%	19,1%	17,5%	21,2%	18,6%
Inspiring purpose	-25,1%	-20,5%	-22,4%	-19,2%	-24,7%	-27,2%	-23,2%
Interaction with international clients and colleagues	3,4%	3,2%	-2,6%	-2,8%	0,0%	1,6%	0,5%
Professional training & development	5,2%	4,2%	6,9%	10,7%	-0,6%	1,1%	4,6%
Respect for its people	-12,2%	-0,6%	-9,6%	2,0%	-14,9%	-7,7%	-7,2%
Sponsorship of future education	-4,0%	7,3%	0,1%	2,6%	-1,7%	-0,8%	0,6%
Support for gender equality	-28,6%	-14,3%	-20,7%	-15,8%	-15,0%	-13,6%	-18,0%

The following significant differences between engineering and humanities students' expectations about their work environment were observed;

- Engineering students appreciate innovation (+18.6%) and embracing new technologies (+23.4%) much more than humanities students. Competitive base salary (+7.5%) and professional training and development (+4.6%) were more important employer attributes for engineers than for humanities students.
- For humanities students, ethical standards (-24.3%), inspiring purpose (-23.2%), support for gender equality (-18.0%) and corporate social responsibility (-17.3%) were much more important than for engineers.

5.3.4. Comparison between engineering students' attractive employer attributes with different age

The final section compares the differences and convergences between Generation Z and Generation Y engineering students' attractive employer attributes in the six target countries. The results of GEN Z are in Table 59 and the results of GEN Y in Table 60. Comparison of these two is in Table 61.

Table 59. Attractive employer attributes of GEN Z.

GEN Z (17-22 years old)							
Attractive employer attributes	BE	DK	FI	FR	IE	SE	Aver.
A creative and dynamic work environment	48,2%	48,6%	36,9%	44,2%	43,0%	54,8%	46,0%
Challenging work	49,5%	37,0%	23,2%	54,0%	26,2%	45,8%	39,3%
Commitment to diversity and inclusion	6,8%	9,2%	11,8%	9,4%	9,0%	16,0%	10,4%
Competitive base salary	31,1%	40,4%	46,9%	39,3%	35,9%	28,7%	37,0%
Corporate Social Responsibility	16,1%	17,5%	15,5%	16,5%	10,3%	16,0%	15,3%
Embracing new technologies	45,7%	40,8%	41,7%	26,2%	44,3%	29,7%	38,1%
Encouraging work-life balance	17,8%	21,3%	27,1%	29,9%	41,5%	29,1%	27,8%
Ethical standards	11,2%	19,9%	23,2%	29,9%	24,7%	16,3%	20,9%
Innovation	52,1%	40,2%	41,6%	48,5%	52,3%	41,6%	46,0%
Inspiring purpose	18,5%	39,7%	25,8%	31,9%	26,7%	40,3%	30,5%
Interaction with international clients and colleagues	21,6%	29,6%	20,1%	26,3%	16,9%	26,8%	23,5%
Professional training and development	39,4%	41,2%	37,3%	28,8%	41,5%	48,8%	39,5%
Respect for its people	37,8%	33,0%	36,0%	29,1%	34,9%	34,5%	34,2%
Sponsorship of future education	24,8%	22,5%	15,2%	22,6%	22,7%	16,2%	20,7%
Support for gender equality	20,3%	22,2%	25,6%	29,3%	17,2%	27,7%	23,7%

Table 60. Attractive employer attributes of GEN Y.

GEN Y (23-38 years old)							
Attractive employer attributes	BE	DK	FI	FR	IE	SE	Aver.
A creative and dynamic work environment	43,3%	48,9%	33,5%	40,6%	40,0%	53,2%	43,3%
Challenging work	51,3%	35,6%	27,9%	56,7%	36,5%	45,6%	42,3%
Commitment to diversity and inclusion	7,9%	9,7%	11,2%	9,8%	10,9%	19,0%	11,4%
Competitive base salary	39,6%	43,8%	50,8%	44,5%	40,8%	37,2%	42,8%
Corporate Social Responsibility	17,0%	18,6%	18,7%	20,6%	14,9%	19,5%	18,2%
Embracing new technologies	45,1%	40,2%	36,5%	23,4%	37,9%	24,7%	34,6%
Encouraging work-life balance	26,5%	27,1%	31,1%	36,3%	43,1%	37,8%	33,7%
Ethical standards	10,6%	20,4%	23,3%	28,9%	28,2%	18,5%	21,6%
Innovation	55,2%	41,7%	38,7%	41,6%	46,8%	41,3%	44,2%
Inspiring purpose	23,0%	36,9%	26,1%	38,8%	32,2%	44,6%	33,6%
Interaction with international clients and colleagues	25,9%	27,9%	16,7%	21,3%	16,7%	20,9%	21,6%
Professional training and development	43,0%	43,6%	40,1%	35,8%	51,7%	45,7%	43,3%
Respect for its people	37,6%	39,9%	40,2%	28,0%	34,7%	35,2%	35,9%
Sponsorship of future education	34,5%	26,2%	20,3%	25,0%	24,5%	20,8%	25,2%
Support for gender equality	17,0%	23,6%	21,9%	24,2%	16,2%	30,7%	22,3%

Table 61. Gen Z versus GEN Y attractive employer attributs.

GEN Z / GEN Y Difference							
Attractive employer attributes	BE	DK	FI	FR	IE	SE	Average
A creative and dynamic work environment	4,9%	-0,3%	3,4%	3,6%	3,0%	1,6%	2,7%
Challenging work	-1,8%	1,5%	-4,7%	-2,6%	-10,3%	0,3%	-2,9%
Commitment to diversity and inclusion	-1,2%	-0,5%	0,6%	-0,3%	-1,9%	-3,1%	-1,1%
Competitive base salary	-8,5%	-3,4%	-3,9%	-5,2%	-4,9%	-8,6%	-5,7%
Corporate Social Responsibility	-0,9%	-1,2%	-3,2%	-4,1%	-4,6%	-3,5%	-2,9%
Embracing new technologies	0,6%	0,6%	5,2%	2,8%	6,4%	5,0%	3,4%
Encouraging work-life balance	-8,7%	-5,8%	-4,0%	-6,5%	-1,6%	-8,7%	-5,9%
Ethical standards	0,6%	-0,5%	-0,1%	1,1%	-3,5%	-2,2%	-0,8%
Innovation	-3,1%	-1,5%	2,9%	6,9%	5,5%	0,3%	1,8%
Inspiring purpose	-4,5%	2,7%	-0,2%	-6,8%	-5,5%	-4,3%	-3,1%
Interaction with international clients and colleagues	-4,3%	1,7%	3,4%	5,0%	0,2%	5,9%	2,0%
Professional training and development	-3,6%	-2,4%	-2,8%	-7,1%	-10,2%	3,1%	-3,8%
Respect for its people	0,2%	-6,9%	-4,3%	1,0%	0,2%	-0,6%	-1,7%
Sponsorship of future education	-9,7%	-3,8%	-5,1%	-2,4%	-1,8%	-4,5%	-4,6%
Support for gender equality	3,3%	-1,4%	3,7%	5,1%	1,0%	-2,9%	1,5%

Younger engineering students from Generation Z have a higher appreciation for embracing new technologies (+3.4%), working in a creative work environment (+2.7%), international connections (+2.0%), innovation (+1.8%) and support for gender equality (+1.5%) compared to the older generation.

For this older generation, having a work-life balance (-5.9%), a competitive base salary (-5.7%), sponsorship of future education (-4.6%), opportunities for professional training and development (-3.8%), inspiring purpose (-3.1%), corporate social responsibility (-2.9%) and challenging work (-2.9%) are more important than for younger engineering students.

The results show that generation Z is attracted by innovation (46%) and by new technologies (38%). They are looking for a creative and dynamic work environment (46%) and challenging work (38%) where they are paid with a competitive base salary (37%). For them, their professional development remains important (39%) and they understand the importance of lifelong learning in their future professional life.

6.0. Overall Summary

6.1. Career Goals

The results of this study show a convergence in students' career goals in the six target countries with slight differences between male and female engineering students and humanities and engineering students. We identified the most important career goals for young students and adult learners are;

- having a work-life balance and
- working with a meaningful purpose.

Small differences were observed between the career goals of male and female engineering students. For male engineering students, the most important career goal is having a work-life balance followed

by working for a good cause. They also expressed the importance of having a secure job and opportunity for leadership. For female engineering students and humanities students, to be dedicated to a good cause was selected as the most important career goal.

6.2. Soft skills

Both female and male engineering students believe that they are good at problem-solving, they are responsible and they have a positive attitude. There is a slight difference between male and female engineering students as female engineering students think that their strongest soft skill is their capacity to be responsible and male engineering students believe their strongest skill is problem-solving. Both female and male engineering students think that they have weaker skills in time management and integrity. All engineering students wanted to improve their time management skills but they were not at all that much interested in improving their integrity skills.

The most significant difference between engineering and humanities students' strongest soft skills are in problem-solving and in communication. Engineering students believe that they are good at problem-solving and weak in communication skills whereas humanities students believe they have strengths in communication and are weak in problem-solving. Humanities students believe they have good teamwork skills whereas engineering students think that this is an area where they could improve.

Time management, communication and teamwork are the soft skills which both humanities and engineering students want to improve. Even though humanities students feel that they are quite strong in communication, they still want to improve those skills.

6.3. Attractive employer attributes

Engineering students expressed their preference to have innovative work, in a creative and dynamic working environment and opportunities for professional training and development in their work place. It is clear that these attributes are closely related to their career progress and future employment perspectives and identified as important drivers of their career choice. Significant differences were observed between male and female engineering students' work preferences. The most significant difference relates to support for gender equality which was ranked by female engineering students at a higher importance than by male engineering students in all target countries. For humanities students, ethical standards, inspiring purpose, support for gender equality and corporate social responsibility were ranked the most important for the future work. These attributes are closely linked to aspects of the SDGs which would suggest achievement of these goals could be an important motivation factor in their education.

7.0 Conclusion

The quantitative study is completed in the framework of the A-STEP 2030 project in the six target countries of project participants in order to better understand students' preferences, skills and career goals. The results of our study provide evidences concerning the importance of meaningful purposes to motivate students. This young generation is motivated to work for good causes like the achievement of the sustainable development goals.

It is important to highlight the principal limit of this study, that it was completed only for six target countries that does not allow a generalisation of the results for Europe. It is important to note that this is a quantitative study and thus the reasons for the results presented cannot yet be explained.

In order to gain a deeper understanding of these results, a qualitative study will be carried out as the next task of the A-STEP 2030 project. These qualitative studies will contribute to the development of the

Intellectual Output 2 as well as giving useful information for the development of a new learning and teaching activity and recommendations for educational policies.

8.0 Acknowledgements

We would like to acknowledge the EU Erasmus+ funding body and all partners and associated partners in the A-STEP 2030 project for their help in this Activity and report. Many thanks also to all the students who completed the Universum CareerTest survey which was used to provide data for this report.

The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.