

# SMEs Needs For Competencies Development In Green Growth

Survey  
Report

*Lithuania*

*Sweden*

*Denmark*

*Poland*

*Germany*

2021



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# Content

Introduction / 7

Partners / 8

**1. Methodology / 10**

**2. Overview of the main results / 13**

**3. Overview of the main results by the country / 21**

3.1 The situation in Denmark / 23

3.2 The situation in Sweden / 32

3.3 The situation in Lithuania / 41

3.4 The situation in Poland / 50

3.5 The situation in Germany / 59

**4. Green skills – Key qualifications for green jobs / 68**

Main conclusions and recommendations / 69

*List of Figures / 4*

*List of Annexes / 6*

*Annexes / 71*

# List of Figures

## 2 Chapter: Overview of the main results

Fig. 1	Distribution of respondents by country, per cent	page 13
Fig. 2	Distribution of respondents by sector, per cent	page 13
Fig. 3	Distribution of respondents by company size, per cent	page 14
Fig. 4	The field of study most likely hire from	page 15
Fig. 5	Priorities when selecting a candidate	page 15
Fig. 6	Skills that newly graduates are lacking when they apply for a job	page 16
Fig. 7	Soft skills that newly graduates are lacking when they apply for a job	page 17
Fig. 8	The biggest challenge within the sector	page 17
Fig. 9	Distribution by an internship/traineeship offers in companies, per cent	page 18
Fig. 10	Level of education needed for interns/trainees	page 18
Fig. 11	Skills and competencies developed during an internship	page 19

## 3.1 Chapter: Overview of the main results by the country - Denmark

Fig. 12	Distribution of respondents from Denmark by sector, per cent	page 23
Fig. 13	Distribution of respondents from Denmark by company size, per cent	page 23
Fig. 14	Ways of new employees recruitment	page 24
Fig. 15	The field of study most likely hire from	page 24
Fig. 16	Priorities when selecting a candidate	page 25
Fig. 17	Skills that newly graduates are lacking when they apply for a job	page 26
Fig. 18	Soft skills that newly graduates are lacking when they apply for a job	page 26
Fig. 19	The biggest challenge within the sector	page 27
Fig. 20	Distribution by an internship/traineeship offers in companies, per cent	page 27
Fig. 21	Level of education needed for interns/trainees	page 28
Fig. 22	Skills and competencies developed during an internship	page 29

## 3.2 Chapter: Overview of the main results by the country - Sweden

Fig. 23	Distribution of respondents from Sweden by sector, per cent	page 32
Fig. 24	Distribution of respondents from Sweden by company size, per cent	page 32
Fig. 25	Ways of new employees recruitment	page 33
Fig. 26	The field of study most likely hire from	page 34
Fig. 27	Priorities when selecting a candidate	page 34
Fig. 28	Skills that newly graduates are lacking when they apply for a job	page 35
Fig. 29	Soft skills that newly graduates are lacking when they apply for a job	page 36
Fig. 30	The biggest challenge within the sector	page 36
Fig. 31	Distribution by an internship/traineeship offers in companies, per cent	page 37
Fig. 32	Level of education needed for interns/trainees	page 38
Fig. 33	Skills and competencies developed during an internship	page 38

### 3.3 Chapter: Overview of the main results by the country - Lithuania

Fig. 34	Distribution of respondents from Lithuania by sector, per cent	page 41
Fig. 35	Distribution of respondents from Lithuania by company size, per cent	page 41
Fig. 36	Ways of new employees recruitment	page 42
Fig. 37	The field of study most likely hire from	page 43
Fig. 38	Priorities when selecting a candidate	page 43
Fig. 39	Skills that newly graduates are lacking when they apply for a job	page 44
Fig. 40	Soft skills that newly graduates are lacking when they apply for a job	page 44
Fig. 41	The biggest challenge within the sector	page 45
Fig. 42	Distribution by an internship/traineeship offers in companies, per cent	page 45
Fig. 43	Level of education needed for interns/trainees	page 46
Fig. 44	Skills and competencies developed during an internship	page 47

### 3.4 Chapter: Overview of the main results by the country - Poland

Fig. 45	Distribution of respondents from Poland by sector, per cent	page 50
Fig. 46	Distribution of respondents from Poland by company size, per cent	page 50
Fig. 47	Ways of new employees recruitment	page 51
Fig. 48	The field of study most likely hire from	page 52
Fig. 49	Priorities when selecting a candidate	page 52
Fig. 50	Skills that newly graduates are lacking when they apply for a job	page 53
Fig. 51	Soft skills that newly graduates are lacking when they apply for a job	page 53
Fig. 52	The biggest challenge within the sector	page 54
Fig. 53	Distribution by an internship/traineeship offers in companies, per cent	page 54
Fig. 54	Level of education needed for interns/trainees	page 55
Fig. 55	Skills and competencies developed during an internship	page 56

### 3.5 Chapter: Overview of the main results by the country - Germany

Fig. 56	Distribution of respondents from Germany by sector, per cent	page 59
Fig. 57	Distribution of respondents from Germany by company size, per cent	page 59
Fig. 58	Ways of new employees recruitment	page 60
Fig. 59	The field of study most likely hire from	page 60
Fig. 60	Priorities when selecting a candidate	page 61
Fig. 61	Skills that newly graduates are lacking when they apply for a job	page 62
Fig. 62	Soft skills that newly graduates are lacking when they apply for a job	page 62
Fig. 63	The biggest challenge within the sector	page 63
Fig. 64	Distribution by an internship/traineeship offers in companies, per cent	page 63
Fig. 65	Level of education needed for interns/trainees	page 64
Fig. 66	Skills and competencies developed during an internship	page 65

# List of Annexes

*Annex 1* Questionnaire. Analysis of the desired skills and competencies within the Blue and/or Green sector. *page 71*

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# Introduction

The EU suffers from systemic weaknesses in its skills base, which limits its productivity and competitiveness in today's economy and reduce its capacity to exploit the opportunities offered by green growth. The adoption and dissemination of clean technologies require skills in technology application, adaptation and maintenance. Skills are also crucial for economies and businesses to rapidly adapt to changes. Skills development is a critical driver of change, triggering green investment and technological innovation, and bringing sustainable innovations into markets at competitive prices. Small and medium-sized enterprises (SMEs) are likely to require assistance in upgrading the skills of their employees. Developing green skills is part of the broader challenge faced by SMEs of increasing their strategic management capabilities.

The shift to a low-carbon economy, adoption of the Green Deal throughout the European Union, implies structural changes across sectors and occupations. Interdisciplinary skills for green jobs are the prerequisite to make the transition to a greener economy happen. This means that demand for new competencies and skills is arising. New skills set should be updated or even new qualifications across education and training levels should be adopted. Skills gaps are already recognized as a major bottleneck in several sectors.

*The main goal of the “South Baltic Bridge” project is to reduce the gaps between higher education and its graduates and the green and blue labour markets, as well as to increase the motivation of graduates to work in these two economic sectors.* The project includes the creation of an Internet platform, which will contain training materials and appropriate tools for communication between students and employers.

Target groups in the project are vocational schools, university students and employers of the green and blue sector. *The survey was conducted to analyse what skills and competencies needed for green jobs are demanded by companies operating in the green sector. The research aims to identify which skills and competences are needed for green jobs recently. Research methods are comprehensive survey and data analysis.*

# Partners

The project involves 6 partners from 5 countries: Lithuania (2), Poland (1), Sweden (1), Germany (1), Denmark (1). The lead partner in the project is Klaipeda University. Moreover, there are 15 associated partners in the project.

**Klaipeda University** (KU) has experience in international project activities and skilled staff in formal and informal education also participates actively in professional networks and developing platforms, initiates ties with SMEs willing to be more green and blue, supports SMEs with consultation on business development solutions, promotes blue and green growth. KU actively participates in international innovation events, takes a leading role in R&D activities in the Western part of LT, has strong linkages with international networks forwards more innovations-oriented, provides master degree studies "Innovation management", also Marine technologies natural sciences studies, related to the green and blue labour force.

**Klaipeda Economic Development Agency** (KEDA) has appropriate experience in implementing international European projects, the staff has great project management skills. While implementing previous projects, the staff gained abilities to coordinate, manage the projects, implement activities, disseminate the project properly. KEDA team has various certificates which prove that the team can implement various international projects.

**Gdańsk Entrepreneurship Foundation** (GEF) is an NGO founded by the City of Gdansk (2005). Since 2011 GEF runs a Gdansk Business Incubator STARTER focusing on IT, creative industry, maritime and logistic start-ups, presently implements several projects for start-ups, SME and children, youth, and students (entrepreneurial education) from different sources (EU, e.g. INTERREG - Central Europe, BSR; regional EU operational programs; municipal grants; private sources).

**The County Administrative Board of Skåne**, in the very south of Sweden, is a regional management and development authority working directly under the Swedish government. The County Administrative Board of Skåne dates its history back to the year 1634 and has a broad area of responsibility. The Board works on issues concerning the environment, urban development, the labour



market, competence sourcing, the business community, social development, gender equality, human rights, integration and migration, transport, infrastructure, housing, and spatial planning. welfare are interlinked.

*ATI* brings in experiences from many national and international projects. Related to European projects for education and youth, mainly Interreg, ATI will work closely together with schools and SMEs to enhance the specialized skill in educational sciences with the regional skills of marketing, project management, and services in the organization of international workshops. The ATI's mission is achieved in particular through the implementation of scientific events, training programs, and general project strategy development.

*Holbaek Municipality* is a local municipality with an app. 70.000 inhabitants placed on the border of Isefjorden in Zealand, Denmark. Holbaek. Holbaek Municipality has recently opened an experience centre, (Brorfelde.dk) to make science interesting for the citizens. Brorfelde is an observatory. However, the focus of the institution is much broader related to science.

# 1. Methodology

Green jobs are jobs that have a positive impact on the environment. The condition is that the people employed in them are directly or indirectly involved in improving the state of the natural environment. These can be described two-dimensionally as product and process. In the product dimension, they are jobs that involve manufacturing products and/or providing services that directly contribute to environmental protection. They are created by companies from the green sector, e.g. a company producing photovoltaic panels, a company dealing with thermo-modernization of buildings. In the process dimension, on the other hand, they are related to the broadly understood functioning of the company. Green jobs are those where employees perform tasks that contribute to reducing the negative impact of the company on the environment (e.g. Quality department employee, an employee who segregates waste, logistician who optimizes the supply chain). In this sense, those can also be created by a company outside the green sector, but with a strong focus on environmental protection. A good example here could be a company producing plastic packaging, which recycles materials, segregates waste, uses renewable energy sources, etc.

The main goal of the survey was to determine what skills and competencies are needed in green jobs lately. This survey supports the Project "South Baltic Bridge - building bridges for the green tech future" by obtaining information on how to improve the match between education and training systems and labour market needs, facilitate the transition from education to employment in the industry by strengthening VET systems and their quality, and create/develop internship and apprenticeship programs in the workplace. A compendium of knowledge necessary to assess needs and prepare a program to support students of technical schools according to real needs, suggestions, and expectations (within the 5 sectors of green and blue economy i.e. renewable energy, waste management, water management, green building, clean transport). The representatives of companies from green sectors were asked whether they are willing to employ young people after graduation and why they do or do not do it, as well as to find out what opportunities the companies offer to young candidates, whether they offer internships and apprenticeships for students and what young people can gain thanks to them. The opinions of entrepreneurs are the basis for finding the gap in education and experience and trying to find a solution to prevent this from happening in the future.

*The survey was conducted from the 2nd of December 2020 to the 5th of March 2021. Each partner country was required to provide a questionnaire to eligible companies, and a total of 450 SMEs were*

*invited to complete the questionnaire, bringing the total number of respondents to 70.* Due to the world situation at the time as a result of the COVID-19 pandemic, we have encountered difficulties in contacting most companies whose activities were likely suspended or limited. Nevertheless, the 70 SMEs representatives from 5 European countries (Lithuania, Poland, Sweden, Denmark, and Germany) had participated in the survey.

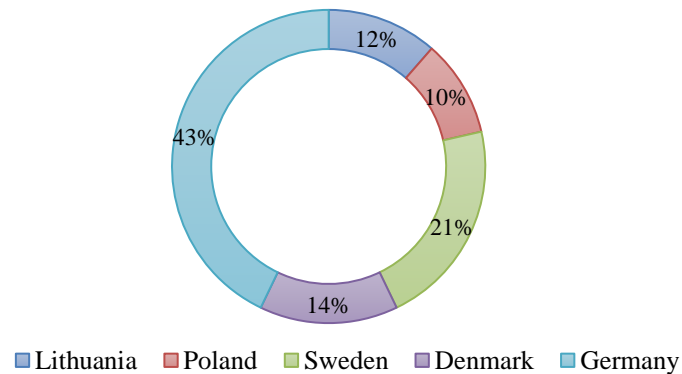
We obtained information through a questionnaire survey prepared for each partner country, the questions were collected and standardized for all countries and by specific sectors of the green and blue economy. The standardized interview questionnaire contained multiple-choice, single-choice closed questions (cafeteria) and open-ended questions (*please see Annex on page 71*).

## 2. Overview of the main results

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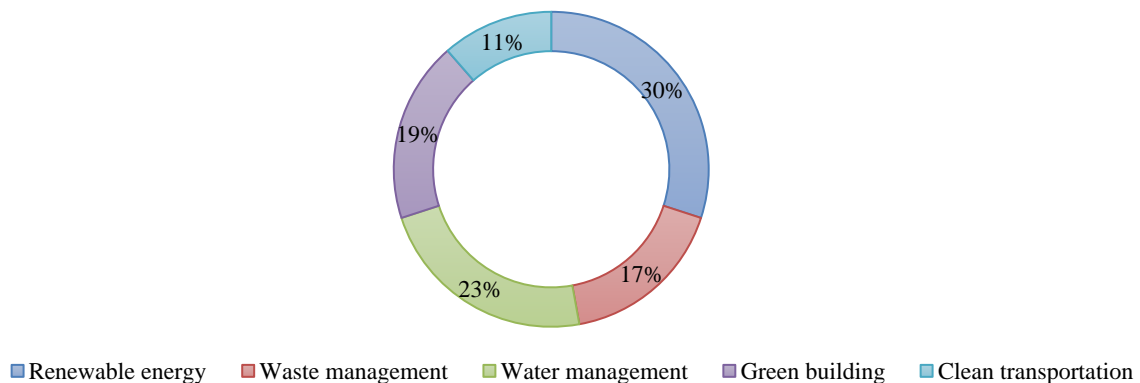
All of the surveyed companies operate in renewable energy, waste management, water management, green building and clean transportation sectors. In Fig. 1, there is shown the distribution of respondents by country.

**Fig. 1.** Distribution of respondents by country, per cent



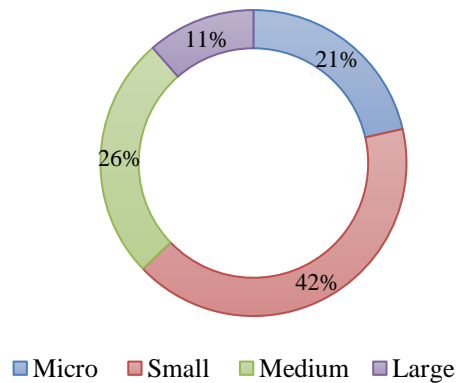
As can be seen from Fig. 1, 43 % of SMEs (or 30 units) were operating in Germany, 21 % (or 15 units) were operating in Sweden, 14 % (or 10 units) were operating in Denmark, 11 % (or 8 units) were operating in Lithuania and only 10 % (or 7 units) were operating in Poland. In Fig. 2, there is shown the distribution of respondents by sector.

**Fig. 2.** Distribution of respondents by sector, per cent



As can be seen from Fig. 2, most of the respondents were operating in the renewable energy sector (30 % or 21 SMEs). 23 % (or 16 SMEs) of respondents were operating in the water management sector, 19 % (or 13 SMEs) were operating in the green building sector, 17 % (or 12 SMEs) were operating in the waste management sector and only 11 % (or 8 SMEs) were operating in the clean transportation sector. The distribution of respondents by company size can be seen in Fig. 3.

**Fig. 3.** Distribution of respondents by company size, per cent



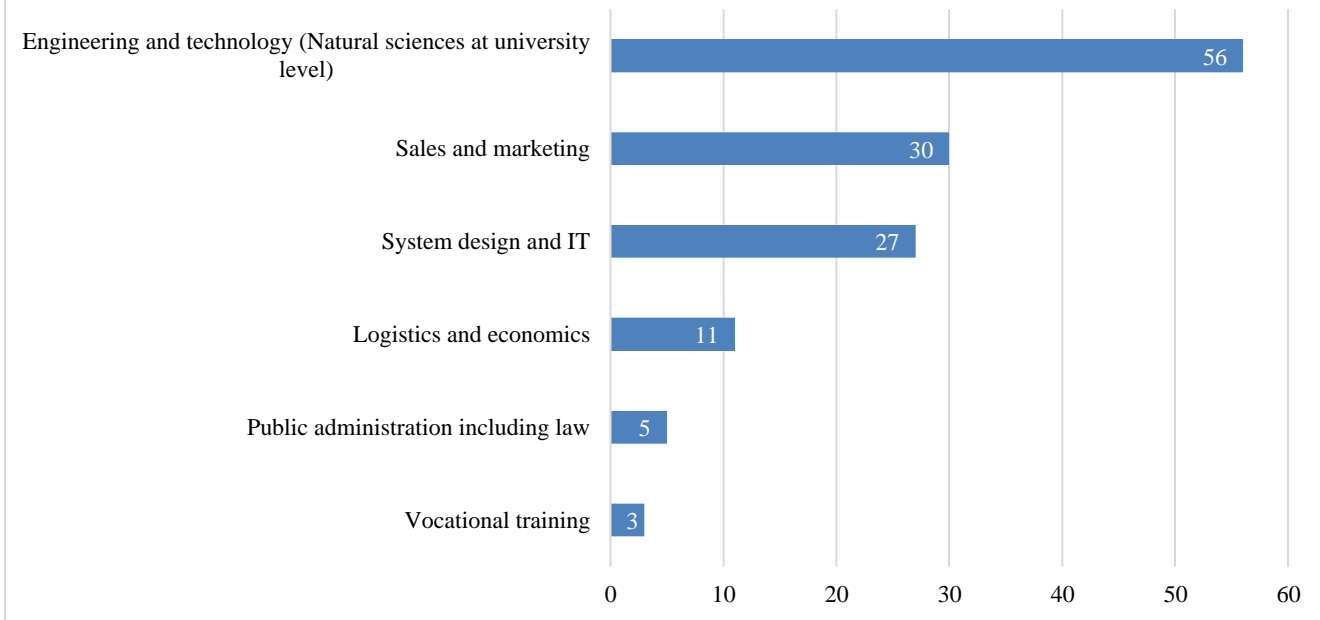
Most companies (42 %) that participated in the survey were small (less than 50 employees), 26 % were medium (less than 250 employees), 21 % were micro (less than 10 employees), and 11 % were large (more than 250 employees).

Representatives of SMEs were asked to indicate which field of study they are likely to hire graduates. The distribution of answers can be seen in Fig. 4.

As can be seen from Fig. 4, the most desired education is Engineering and Technology (80 % of respondents indicated), Sales and Marketing (43 % of respondents indicated), System design and IT (39 % of respondents indicated). The least desired are vocational training (4 %) and Public administration (7 %). Representatives from SMEs also indicated other study fields, such as: plumbing, trained craftsmen, Ocean Engineering and Shipbuilding.

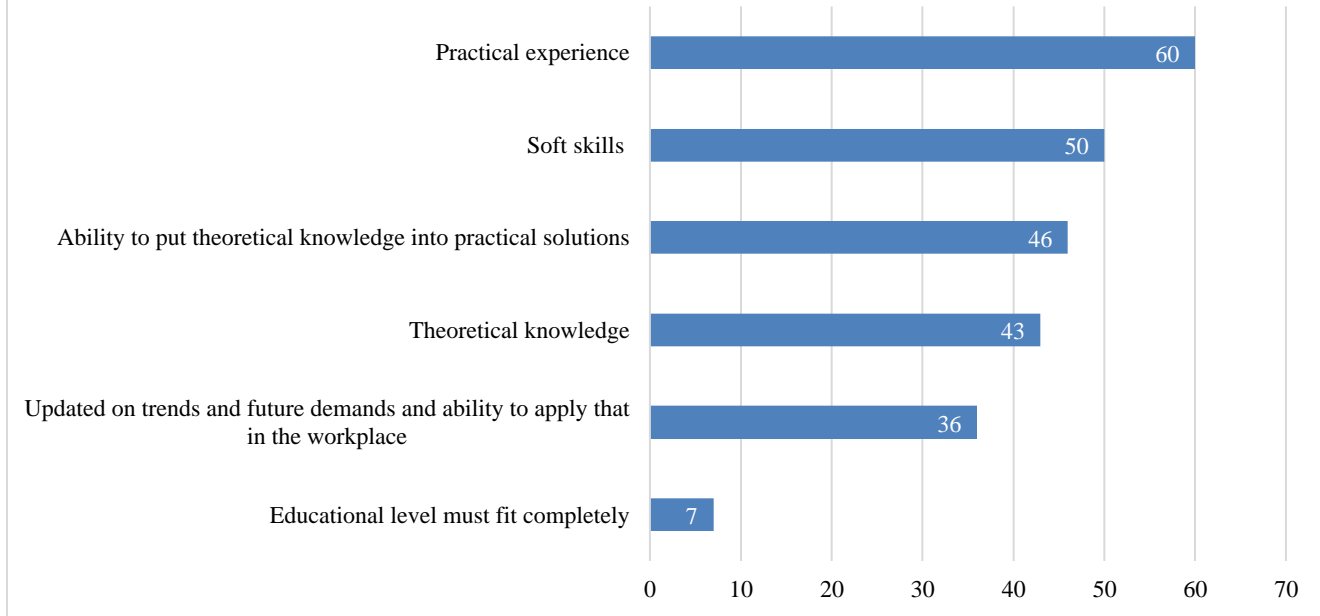
Companies usually recruit new employees via general online job banks (76 %), through specialized agencies (24 %), through the career offices at the university/school (11 %), internal company database (10 %).

**Fig. 4.** The field of study most likely hire from



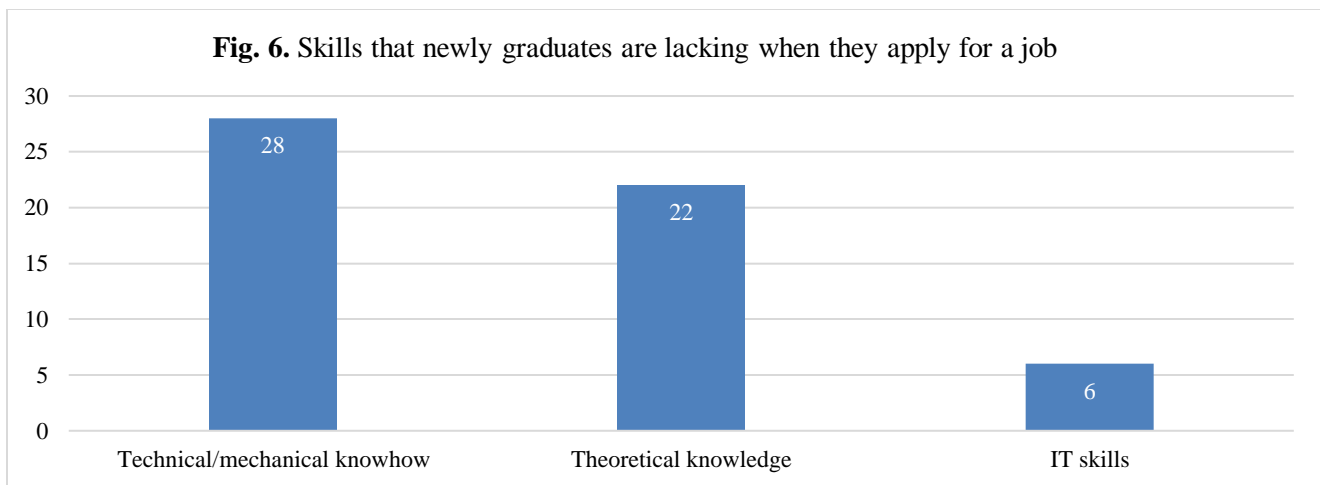
Representatives of SMEs were asked to identify what do they prioritize when selecting a candidate for a position in their company. The distribution of priorities can be seen in Fig. 5.

**Fig. 5.** Priorities when selecting a candidate



As can be seen from Fig. 5, practical experience and soft skills (like good communication skills, ability to network and adapt to the culture of the workplace) are the most valued by companies; these skills were indicated by 86 and 71 % of respondents, respectively. Only 7 representatives indicated that educational level must fit completely. Representatives of SMEs also mentioned other skills: technical skills are a minimum, but team-fit is what makes the decision; entrepreneurial and creative mindset also is valued.

Representatives of SMEs were asked to specify which skills newly graduates are lacking when they apply for a job in a company (see Fig. 6).



As can be seen from Fig. 6, the lack of technical/mechanical know-how was indicated most often. Newly graduates are also lacking theoretical knowledge and IT skills. Representatives also indicated the lack of such skills as: experience; self-driving and motivation; practical use of theoretical knowledge, including technical drawing; completing documents in the construction process; managerial and project management knowledge; Excel skills.

Representatives of SMEs were asked to specify which soft skills newly graduates are lacking when they apply for a job in a company (see Fig. 7).

As can be seen from Fig. 7, newly graduates are lacking the ability to work independently, the ability to design and implement a solution (problem-solving skills), critical thinking and ability to improve on existing ideas, ability to adapt to the culture of the workplace.

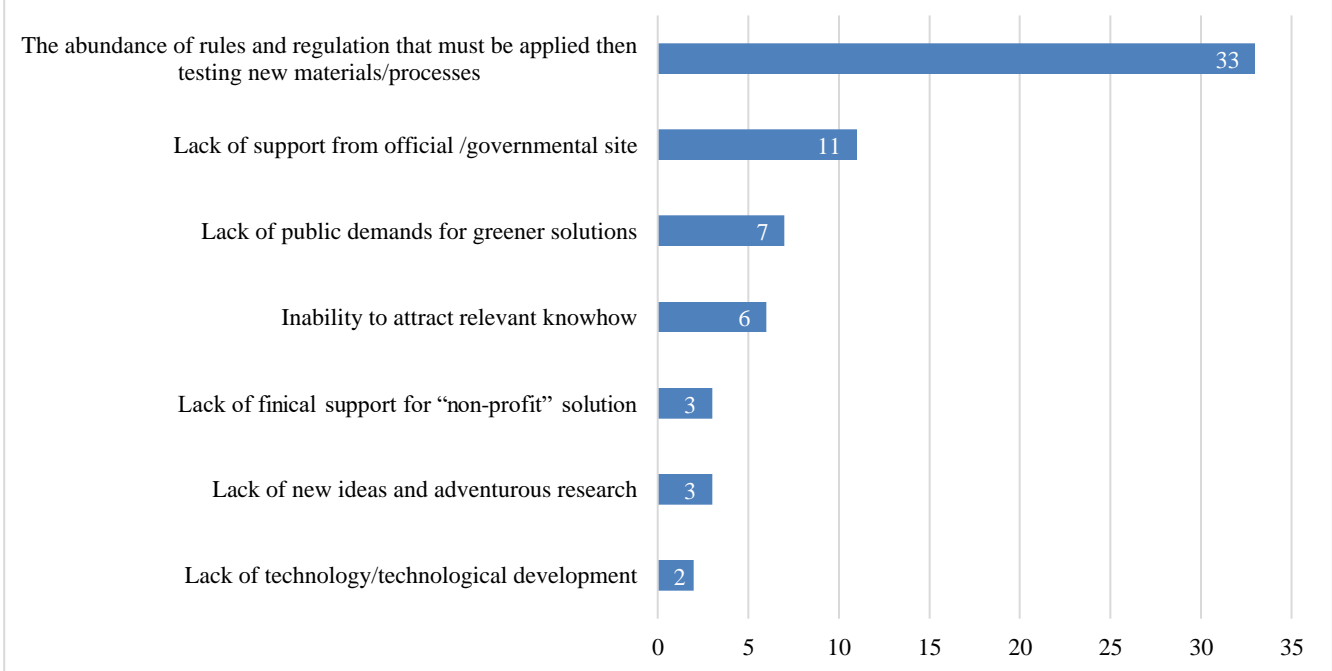


**Fig. 7.** Soft skills that newly graduates are lacking when they apply for a job



Respondents were asked to identify what is the biggest challenge within the sector they are operating in (see Fig. 8).

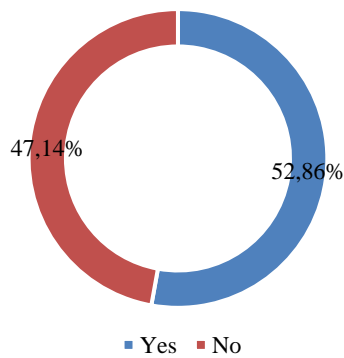
**Fig. 8.** The biggest challenge within the sector



The abundance of rules and regulations that must be applied then testing new materials/processes were identified the most regular (33 cases). Lack of support from official /governmental sites is also seen as a big challenge for SMEs representatives. Respondents indicated also such problems as government regulations; bureaucratic permit processes for new developments; different application of rules and regulations in separate regions; environment.

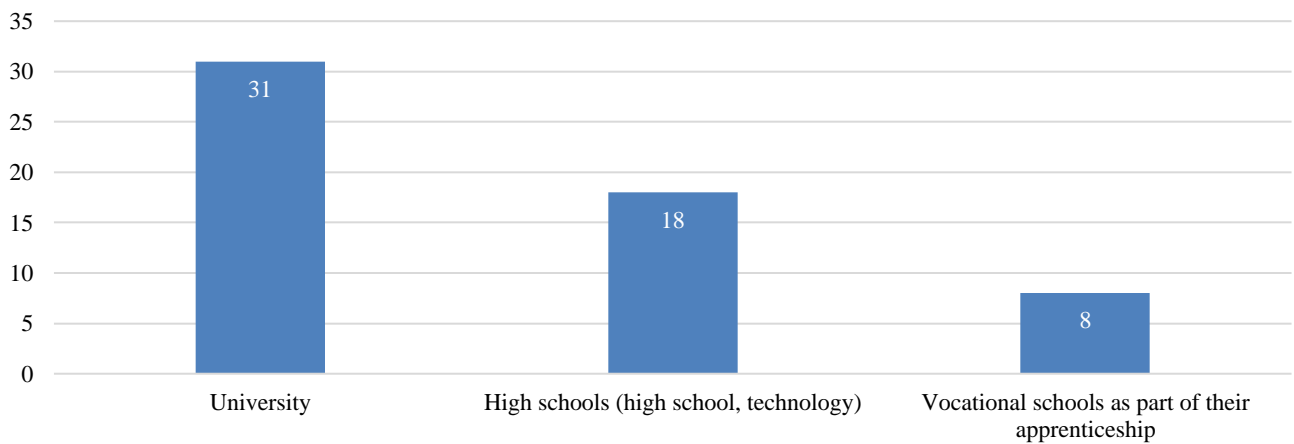
In Fig. 9, there is shown the distribution of possibilities for students of internship/traineeship within companies.

**Fig. 9.** Distribution by an internship/traineeship offers in companies, per cent



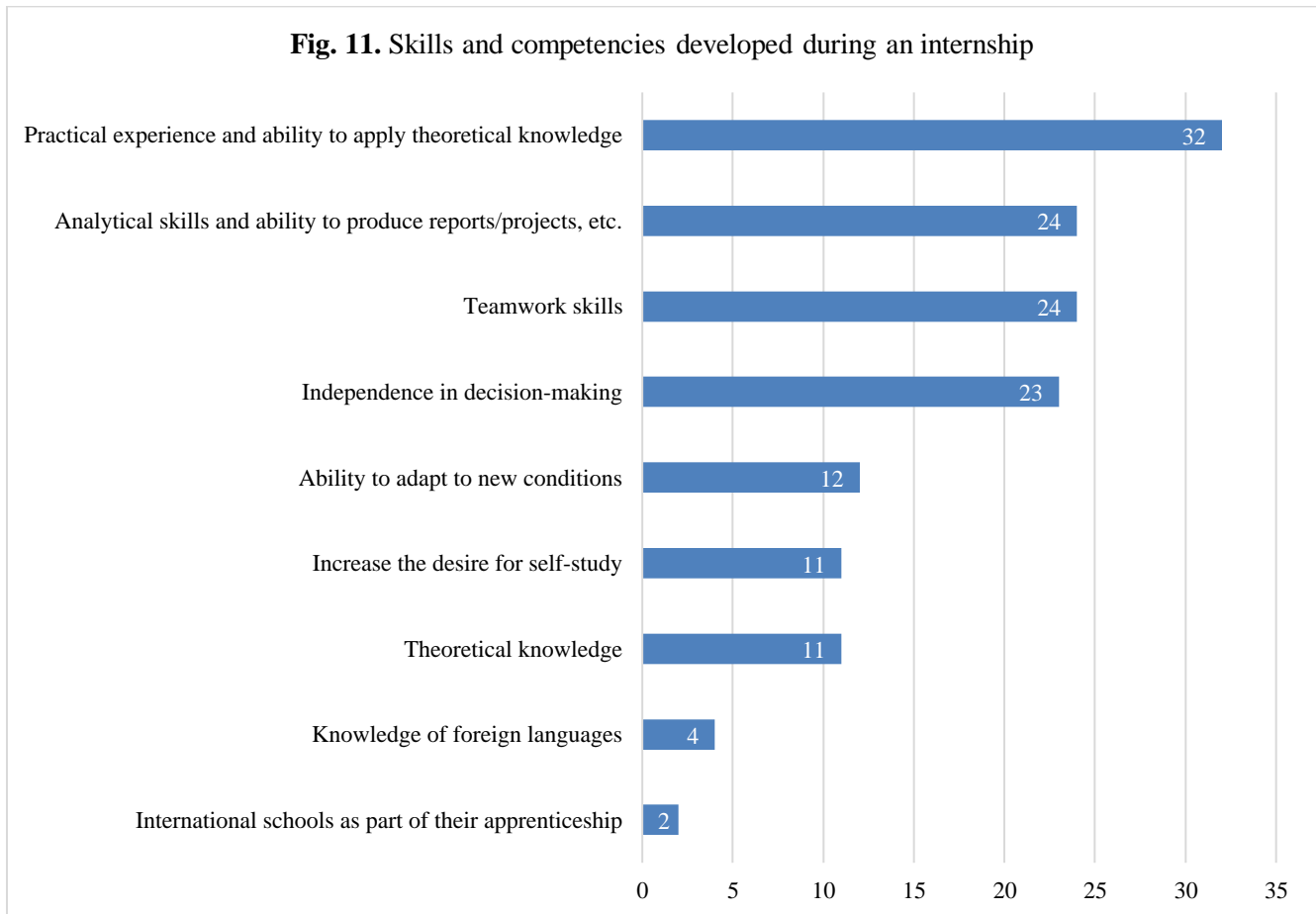
53 % of companies are offering internship/traineeship possibilities for students. Most often internships/traineeships are offered in Denmark (80 %), Lithuania (88 %), the least – in Poland (29 %). The level of education needed for interns/trainees is shown in Fig. 10.

**Fig. 10.** Level of education needed for interns/trainees



As can be seen from Fig. 10, 54 % of respondents indicated that students from the university are most preferred for internship/traineeship and only 14 % - indicated that students from vocational schools are wanted for internship/traineeship.

The respondents were asked to specify which skills and competencies they wish to develop by offering an internship (see Fig. 11).



As can be seen from Fig. 11, companies during internships most often are willing to help students to develop practical experience and ability to apply theoretical knowledge skills, analytical skills, and ability to produce reports/projects, teamwork skills and independence in decision-making skills. Knowledge of foreign languages and international schools as part of their apprenticeship were indicated most rarely.

The main advantages of internships are that students can test and/or apply their theoretical knowledge in practice (35 cases), participate in daily company life (31 cases), test their ability to produce

independent analyses, programs, classes (28 cases), and gain stress-free entry into the labour market (8 cases).

84 % of respondents pointed out that there is a possibility to be employed at the end of internship/practice, and only 16 % stated that such a possibility for interns does exist in their company. 76 % of respondents do not notice educational deficiencies preventing students from being employed directly after graduation.

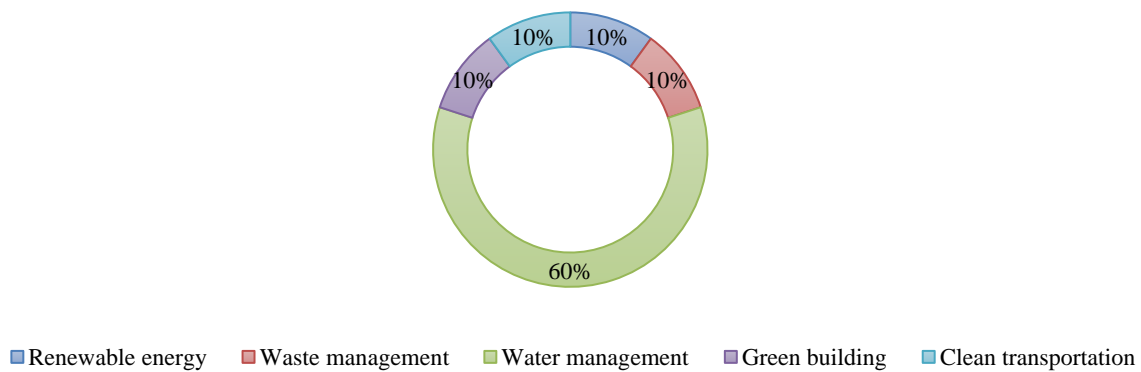
### 3. Overview of the main results *by the country*

## 3.1 Denmark

# 3.1 The situation in Denmark

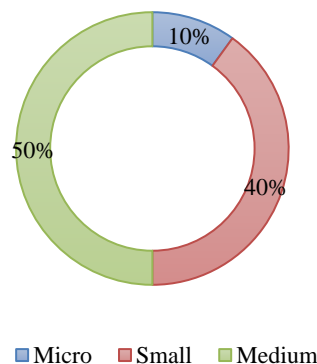
10 SMEs representatives from Denmark took part in a survey. 60 % of respondents were operating in the water management sector. Other sectors as green building, clean transportation, renewable energy and waste management were represented by 10 % of respondents each (see Fig. 12).

**Fig. 12.** Distribution of respondents from Denmark by sector, per cent

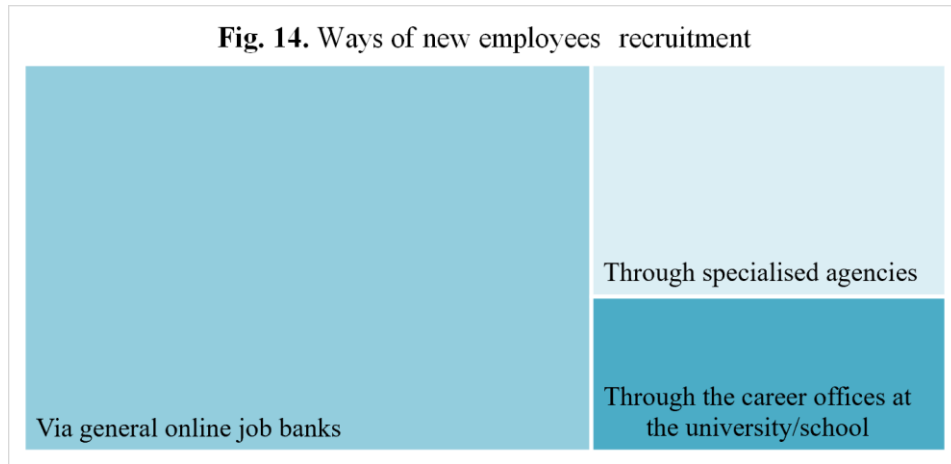


In Fig. 13, there is shown the distribution of respondents by company size. The majority of respondents were from medium-sized (less than 250 employees) companies. Only 10 % were from micro-sized (less than 10 employees) company. Companies operating in the water management sector more often is medium-sized (67 % of them). Meanwhile, companies operating in renewable energy, waste management, and clean transportation sectors more often are small-sized (less than 50 employees).

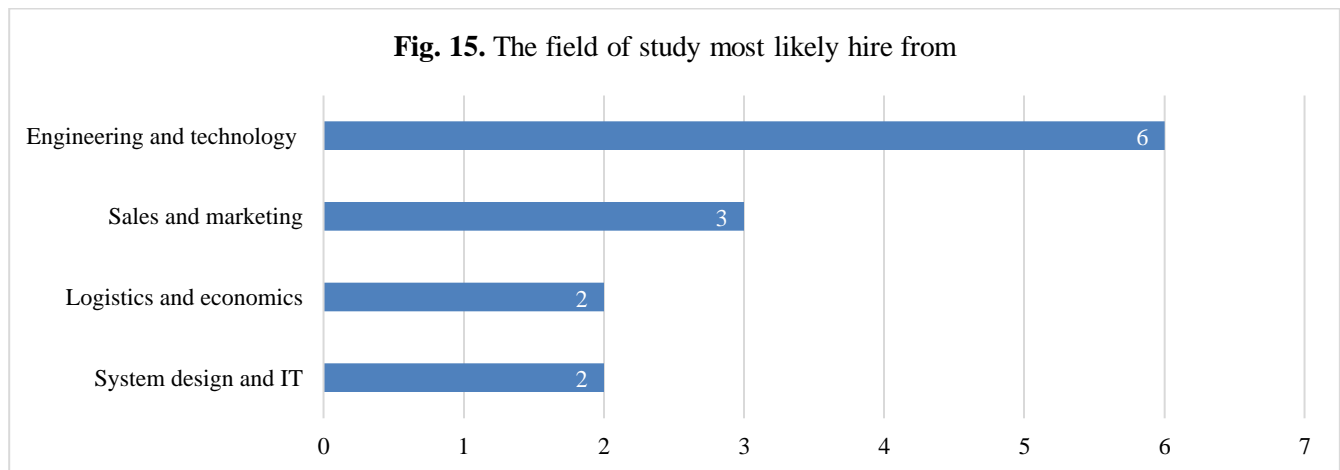
**Fig. 13.** Distribution of respondents from Denmark by company size, per cent



Respondents were asked how they recruit new employees. The distribution of answers is shown in Fig. 14.



As can be seen from Fig. 14, usually companies recruit employees via general online job banks (mentioned 8 times), through specialized agencies (mentioned 3 times), through the career offices at the university/school (mentioned 2 times). Internal company database for new employees’ recruitment is not the popular way (0 answers). An additional way for new employees’ recruitment is the homepage (mentioned 1 time). New employees’ recruitment via general online job banks is very popular (100 % of companies use this way) in the water management sector. Companies operating in the renewable energy sector more often recruit new employees through specialized agencies. Companies operating in the green building sector more often recruit new employees through the career offices at the university/school.

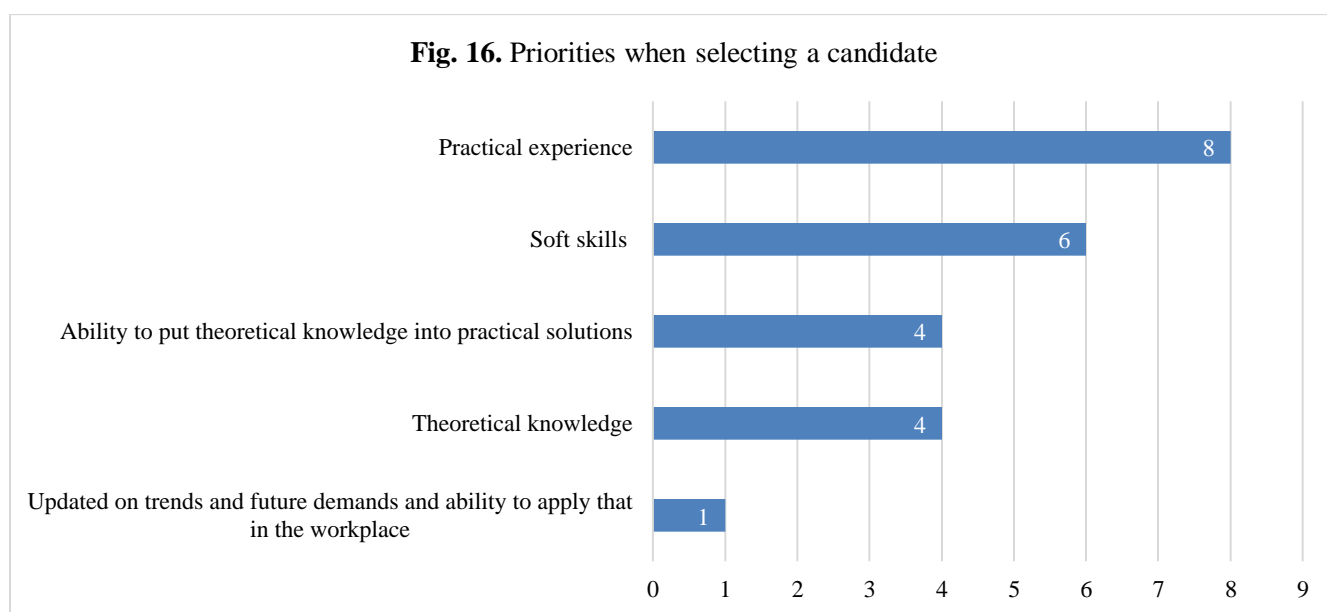




Respondents were asked to identify which field of study they are most likely to hire from. The distribution of answers can be seen in Fig. 15.

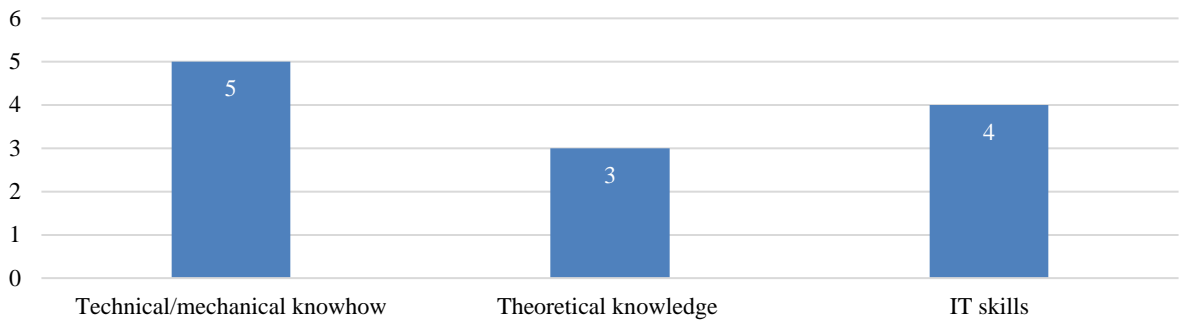
Companies operating in Denmark most likely to hire graduates from Engineering and technology (Natural sciences at the university level) study field, Sales and marketing, Logistics and economics and System design and IT study fields. The logistics and economics study field is more appreciated in companies operating in green building and clean transportation sectors. Respondents also mentioned that plumbing, trained craftsmen is also desired study field, especially in the water management sector.

Respondents were asked to select priorities when selecting a candidate for a position in their company. The distribution of answers can be seen in Fig. 16.



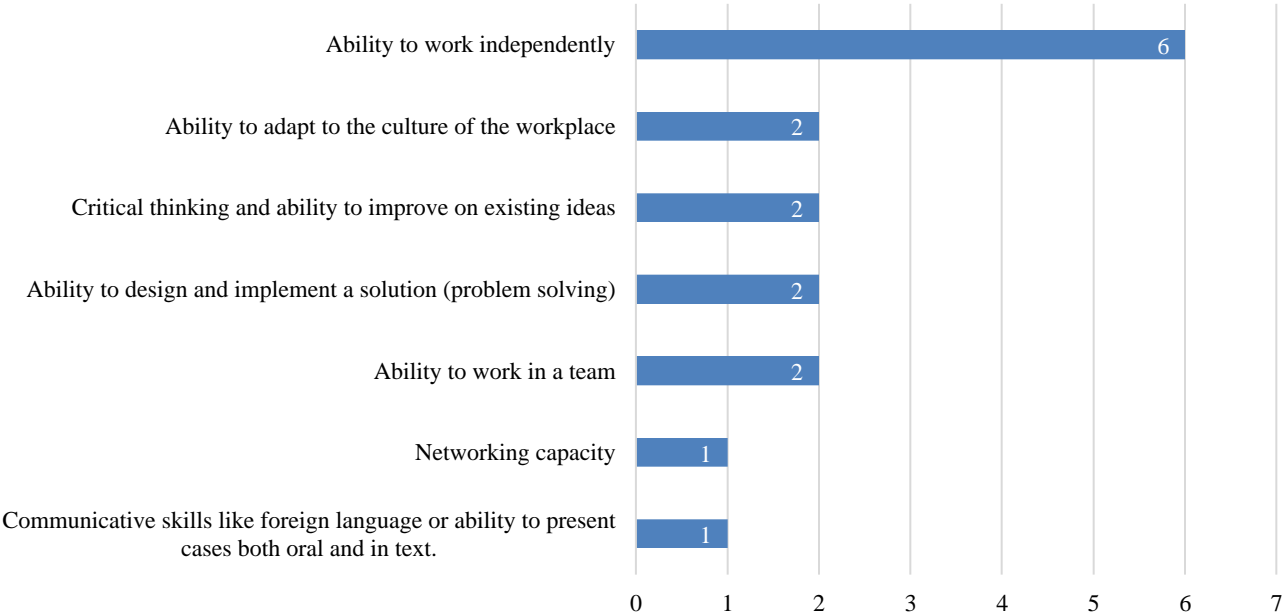
As can be seen from Fig. 16, respondents from Denmark prioritize practical experience (80 %), soft skills such as good communication skills, ability to network and adapt to the culture of the workplace (60 %), theoretical knowledge, and the ability to put theoretical knowledge into practical solutions (40 % respectively) when selecting a candidate for a position in their company. The ability to put theoretical knowledge into practical solutions, soft skills, and practical experience is more relevant to companies operating in the water management sector. Companies operating in renewable energy and clean transportation sectors do not value practical experience (have never chosen this aspect). Respondents were asked to identify which skills do they experience newly graduates are lacking when they apply for a job in their company (see Fig. 17).

**Fig. 17.** Skills that newly graduates are lacking when they apply for a job



Newly graduates more often are lacking technical/mechanical know-how, IT skills. Companies operating in the water management sector also mentioned that new graduates are lacking theoretical knowledge. Respondents were asked to identify which skills do they experience newly graduates are lacking when they apply for a job in their company (see Fig. 18).

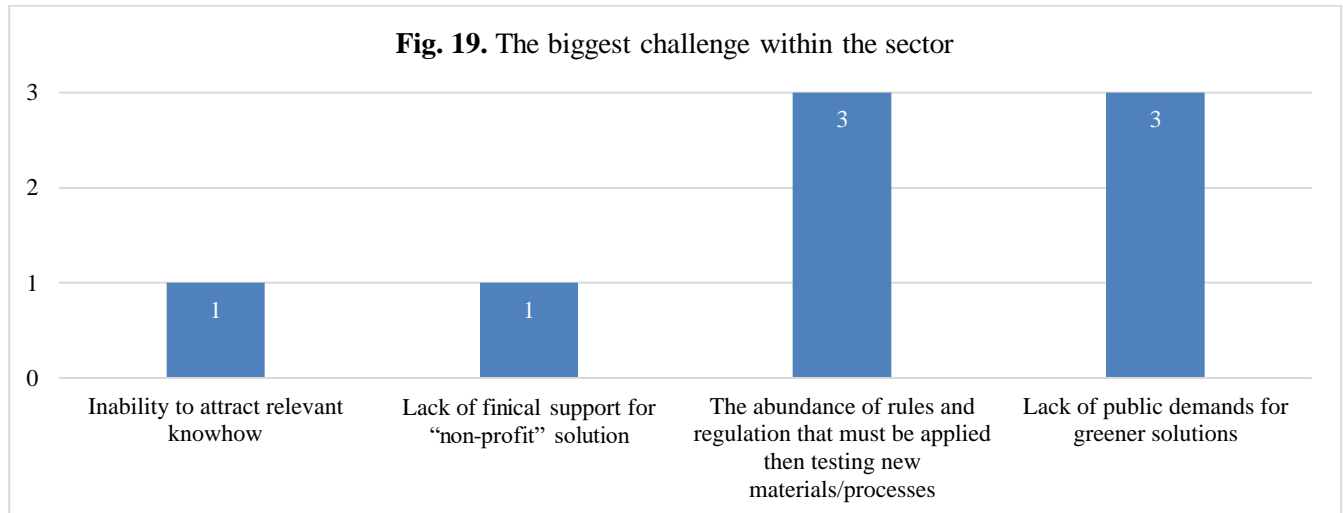
**Fig. 18.** Soft skills that newly graduates are lacking when they apply for a job



The ability to work independently is seen as a major lack of soft skills (especially in the water management sector). Problem-solving skills are relevant for companies operating in the renewable

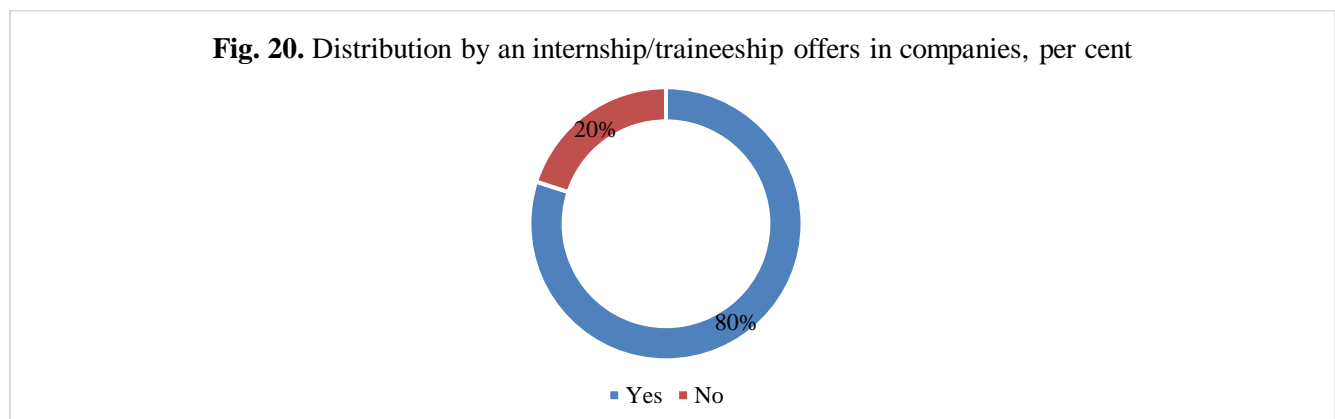
energy sector. Meanwhile, networking capacity skills are relevant for companies operating in the green building sector. For companies operating in the clean transportation sector ability to work independently is seen as the most relevant skill. Representatives from the waste management sector mentioned that new graduates are lacking the ability to adapt to the culture of the workplace.

SMEs operating in Denmark are facing a lack of public demand for greener solutions and this aspect is seen as the biggest challenge within the water management sector (see Fig. 19).



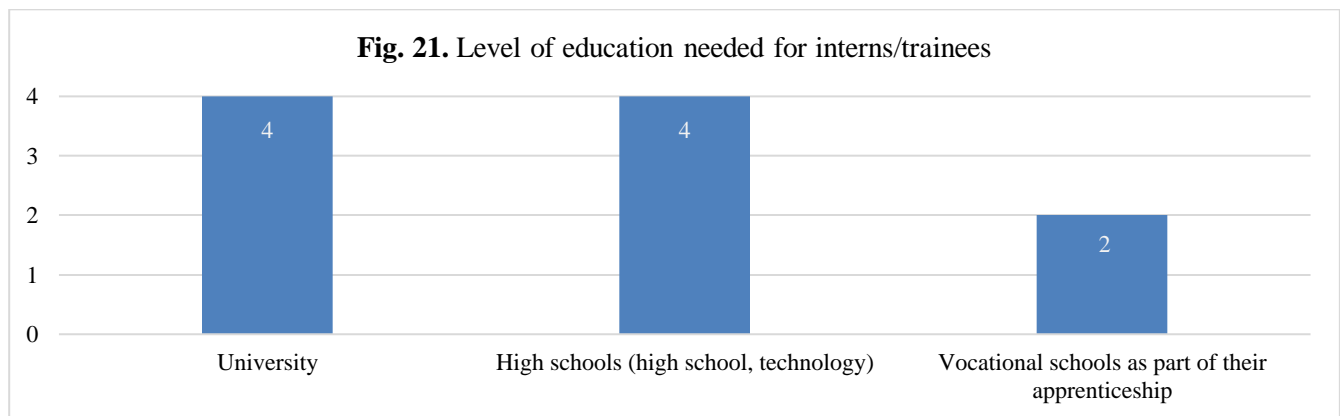
SMEs operating in the waste management sector faces with lack of financial support for “non-profit” solutions. Meanwhile, SMEs operating in the green building sector as the biggest challenge see an inability to attract relevant knowhow. The main challenge in clean transportation is the abundance of rules and regulations that must be applied then testing new materials/processes.

SMEs were asked about internship/traineeship possibilities in their companies. The distribution of answers can be seen in Fig. 20.



SMEs operating in the clean transportation sector do not offer internships/traineeships for students. SMEs operating in other sectors more often propose this possibility. The main reason for the internship/traineeship proposal in the renewable energy sector is acquiring a future workforce (“good way to find qualified people for future job positions “). SMEs operating in waste management propose internship/traineeship possibilities for students because it is part of the company’s mission and vision. The main reason for the internship/traineeship proposal in the green building sector is to learn from the new borders. SMEs operating in the water management sector propose internship/traineeship for students due to such reasons: a great way to evaluate inexperienced people and to educate them while salary is low; to meet regulations, to support students with emerging careers; CSR; to help students and to attract future employees; offer 1 student a 1-year position as student administrative staff. One respondent from the water management sector mentioned that company proposes an internship/traineeship when they have the capacity, but this is not often. SMEs operating in the clean transportation sector does not offer internship/traineeship because of lack of time.

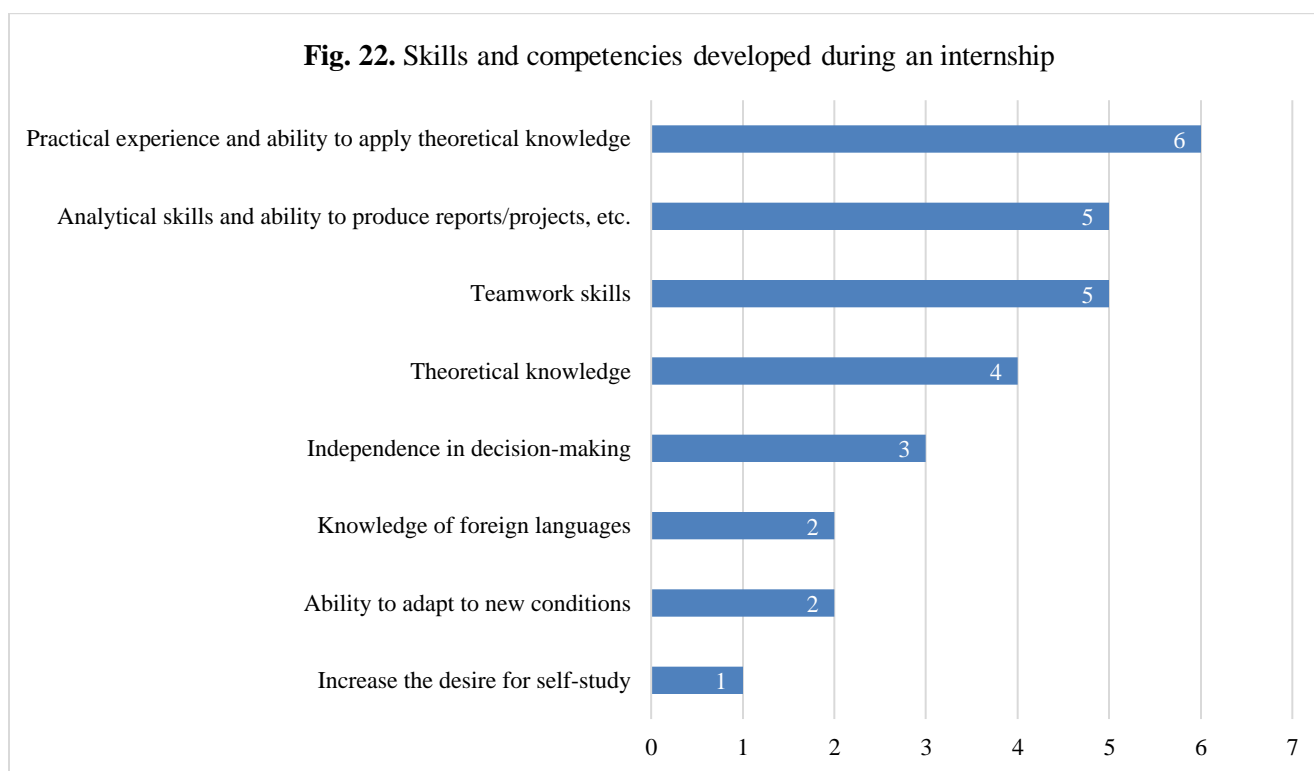
Respondents (in which companies there are internship/traineeship possibilities) were asked to specify at what level of education do they accept interns/trainees (see Fig. 21).



As can be seen from Fig. 21, interns/trainees from universities and high schools most likely can apply for internship/traineeship. SMEs operating in waste management and green building sectors accept interns/trainees only from universities.

SMEs were asked to identify which skills and competencies do they wish to develop by offering an internship. The distribution of answers can be seen in Fig. 22.

**Fig. 22.** Skills and competencies developed during an internship



SMEs proposing internship/traineeship possibilities for students more often wish to develop their practical experience and ability to apply theoretical knowledge (especially in the water management sector), analytical skills, and ability to produce reports/projects (these skills are relevant to all sectors), teamwork skills (not applicable in green building sector), theoretical knowledge (not applicable in waste management sector). During the internships, students can test and/or apply their theoretical knowledge in practice (mentioned 7 times), participate in daily company life (mentioned 7 times), test their ability to produce independent analyses, programs, classes (mentioned 6 times) and gain stress-free entry into the labour market (mentioned 2 times).

It should be noted that if companies propose internship/traineeship possibilities, they also can employ interns/trainees at the end of internship/practice (87.5 % of SMEs indicated this possibility).

Respondents were asked if they notice education deficiencies preventing students from being employed directly after graduation. 90 % of respondents do not notice any education deficiency, 10 % (or 1 respondent) indicate that there is a lack of practical experience.

SMEs representatives also were asked how they would like to influence the curricular of the educational system to meet the needs of their company for skilled labour. Respondents from the renewable energy sector pointed to the need for teamwork integration. SMEs representatives operating in the water management sector suggested giving more practical/lab work, mechanical construction work

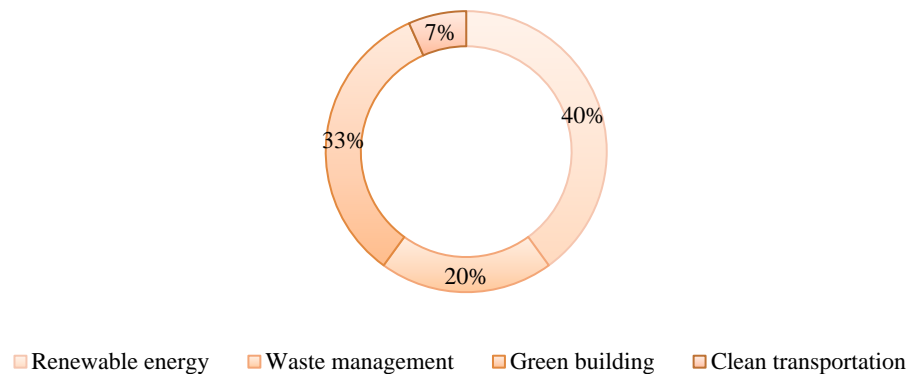
to open minds. Respondents from the green building sector proposed that the education system should be more practical-oriented. SMEs representatives operating in the clean transportation sector suggested educating to the future, not for the past. In order to make students more aware of the broad range of job opportunities that exist within the sector, respondents proposed to organize theme days or candidate festivals where industries present themselves to the students, provide newsletters.

## 3.2 Sweden

## 3.2 The situation in Sweden

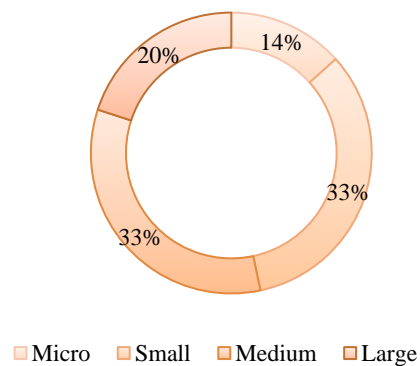
15 SMEs representatives from Sweden took part in a survey. 40 % of respondents were operating in the renewable energy sector (see Fig. 23).

**Fig. 23.** Distribution of respondents from Sweden by sector, per cent



As can be seen from Fig. 23, 20 % of respondents were from the waste management sector, 33 % - from the green building sector and 7 % - from the clean transportation sector. No representatives from the water management sector participated in a survey. In Fig. 24, there is shown the distribution of respondents by company size.

**Fig. 24.** Distribution of respondents from Sweden by company size, per cent





33 % of respondents were from medium-sized (less than 250 employees) and small-sized (less than 50 employees) companies; 20 % were large (more than 250 employees) companies. Only 14 % were from micro-sized (less than 10 employees) companies.

Companies operating in the renewable energy sector more often is small-sized (67 % of them). Meanwhile, companies operating in waste management and green building sectors more often are medium-sized (less than 50 employees).

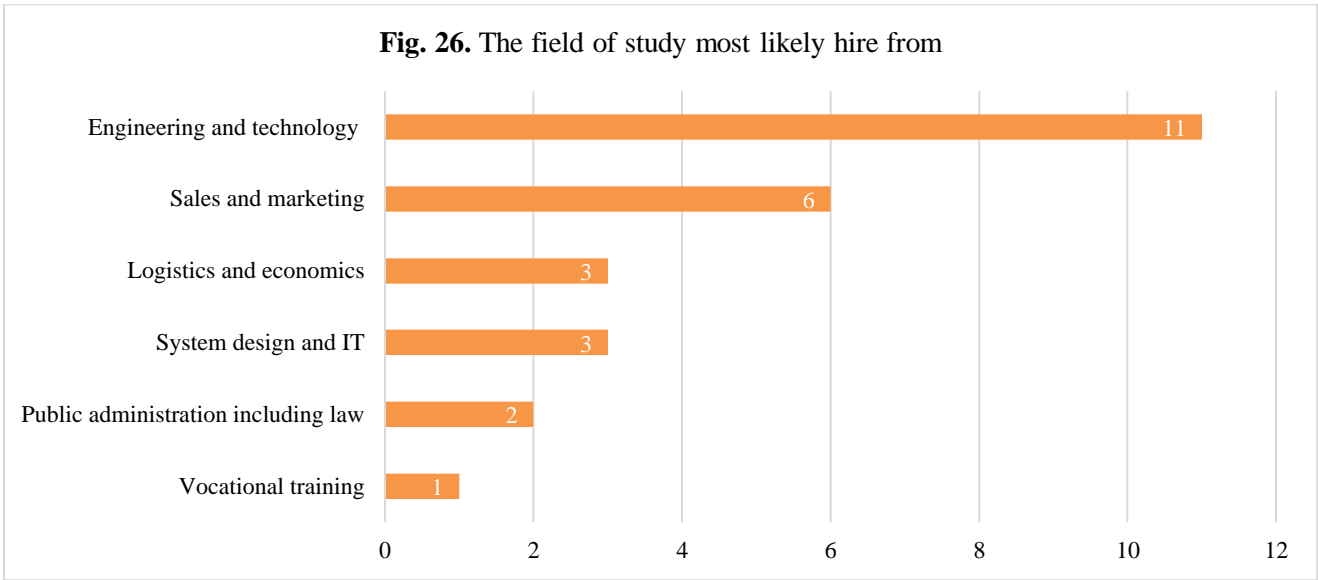
Respondents were asked how they recruit new employees. The distribution of answers is shown in Fig. 25.



As can be seen from Fig. 25, usually companies recruit employees via general online job banks (mentioned 10 times), through specialized agencies (mentioned 10 times, internal company database (mentioned 3 times), through the career offices at the university/school (mentioned 2 times). Additional ways for new employees’ recruitment are direct recruitment from the university via university employees at the departments; contact network in the industry (mentioned 2 times); own social network.

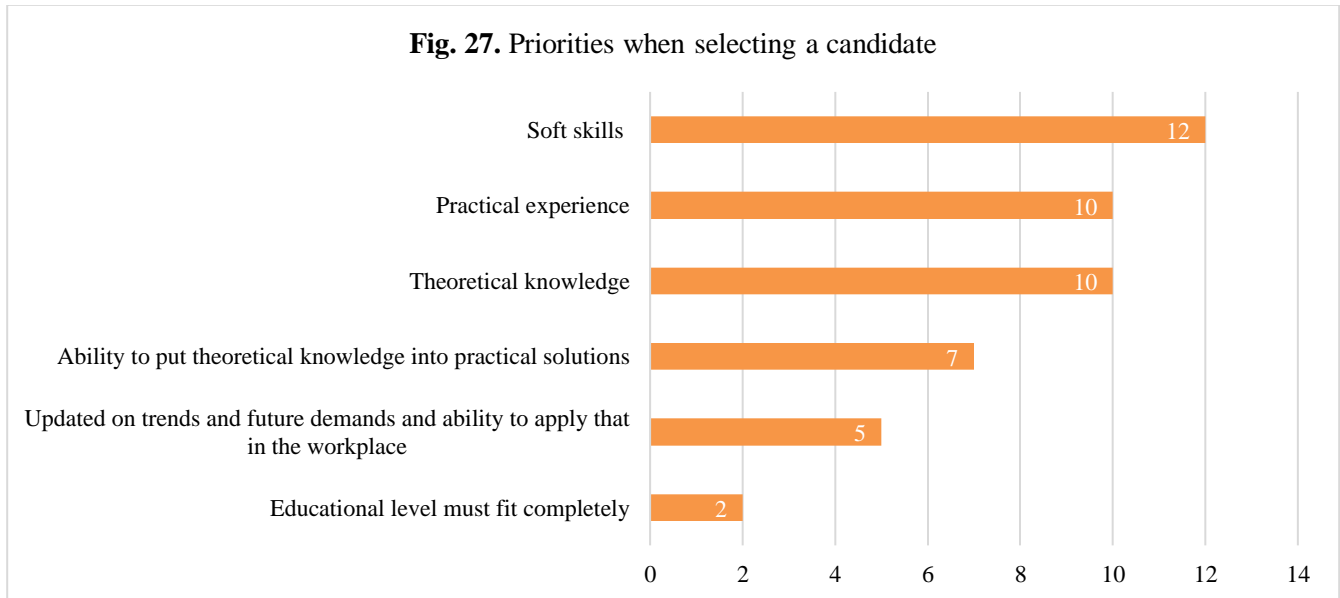
New employees’ recruitment via general online job banks is very popular in waste management (100 % of companies use this way) and renewable energy (80 % of companies use this way) sectors. Companies operating in the green building sector more often recruit new employees through specialized agencies. Companies operating in the clean transportation sector more often recruit new employees through an internal company database.

Respondents were asked to identify which field of study they are most likely to hire from. The distribution of answers can be seen in Fig. 26.



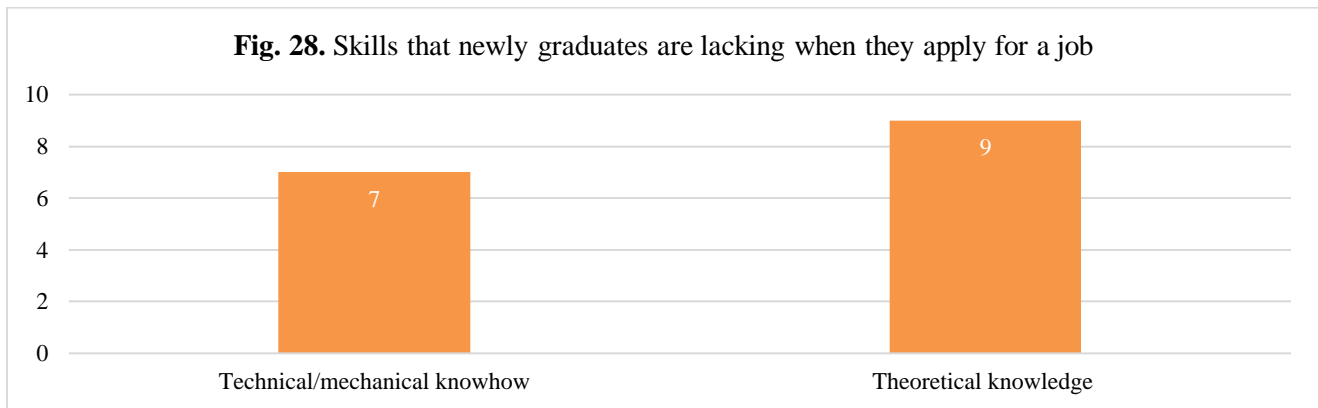
Companies operating in Sweden most likely to hire graduates from Engineering and technology (Natural sciences at the university level) study field, Sales and marketing, Logistics and economics, System design and IT, Public administration study fields. Companies operating in this country also give priority to vocational schools compared to their counterparts from Denmark. The sales and marketing study field is more appreciated in companies operating in waste management.

Respondents were asked to select priorities when selecting a candidate for a position in their company. The distribution of answers can be seen in Fig. 27.



As can be seen from Fig. 27, respondents from Sweden prioritize soft skills such as good communication skills, ability to network and adapt to the culture of the workplace (80 %), practical experience (67 %), theoretical knowledge (67 %), ability to put theoretical knowledge into practical solutions (47 %). Theoretical knowledge (100 %) and updated on trends and future demands and ability to apply that in the workplace (80 %) are relevant to the majority of SMEs operating in the green building sector. Soft skills and practical experience are more relevant to companies operating in the renewable energy sector. Companies operating in renewable energy and clean transportation sectors do not value updated on trends and future demands and the ability to apply that in the workplace (have never chosen this aspect).

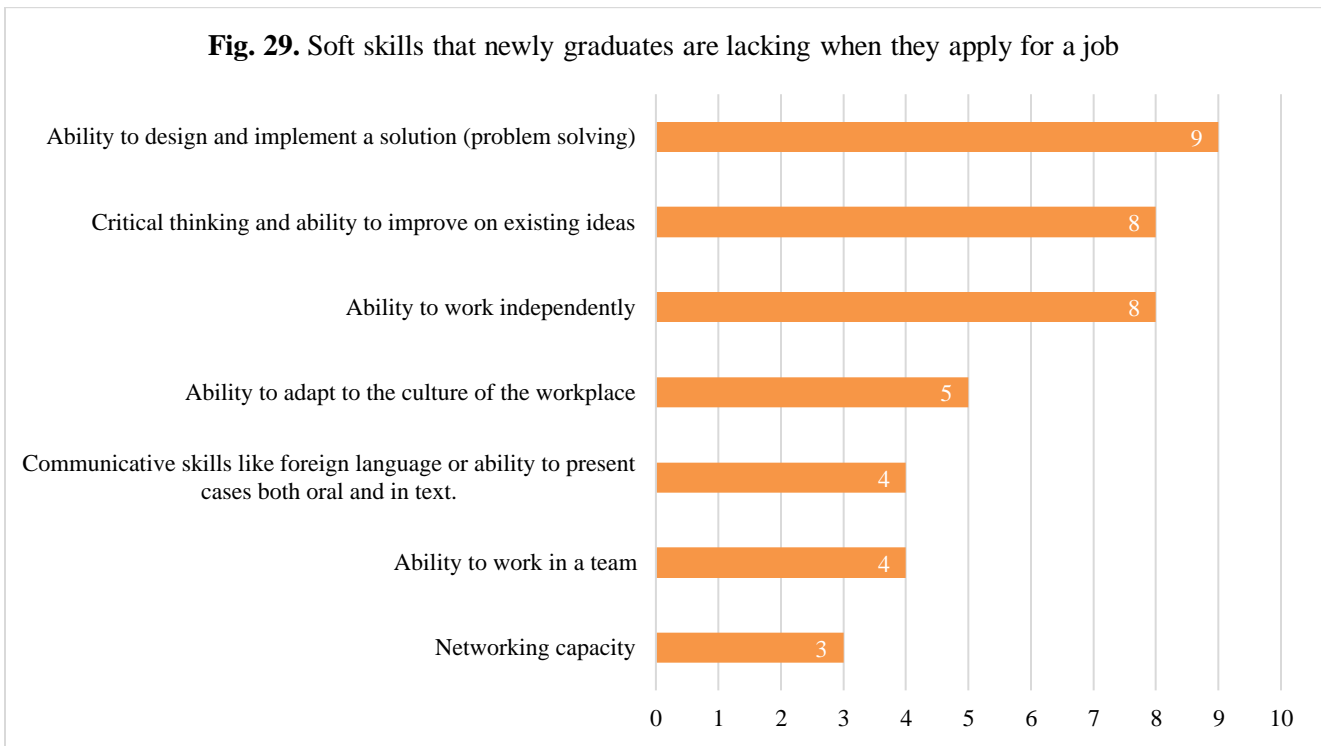
Respondents were asked to identify which skills do they experience newly graduates are lacking when they apply for a job in their company (see Fig. 28).



Newly graduates more often are lacking theoretical knowledge and technical/mechanical know-how. Lack of IT skills has not been chosen by any representative of Swedish SMEs. Lack of experience, self-driving, and motivation was mentioned by representatives. Respondents were asked to identify which skills do they experience newly graduates are lacking when they apply for a job in their company (see Fig. 29).

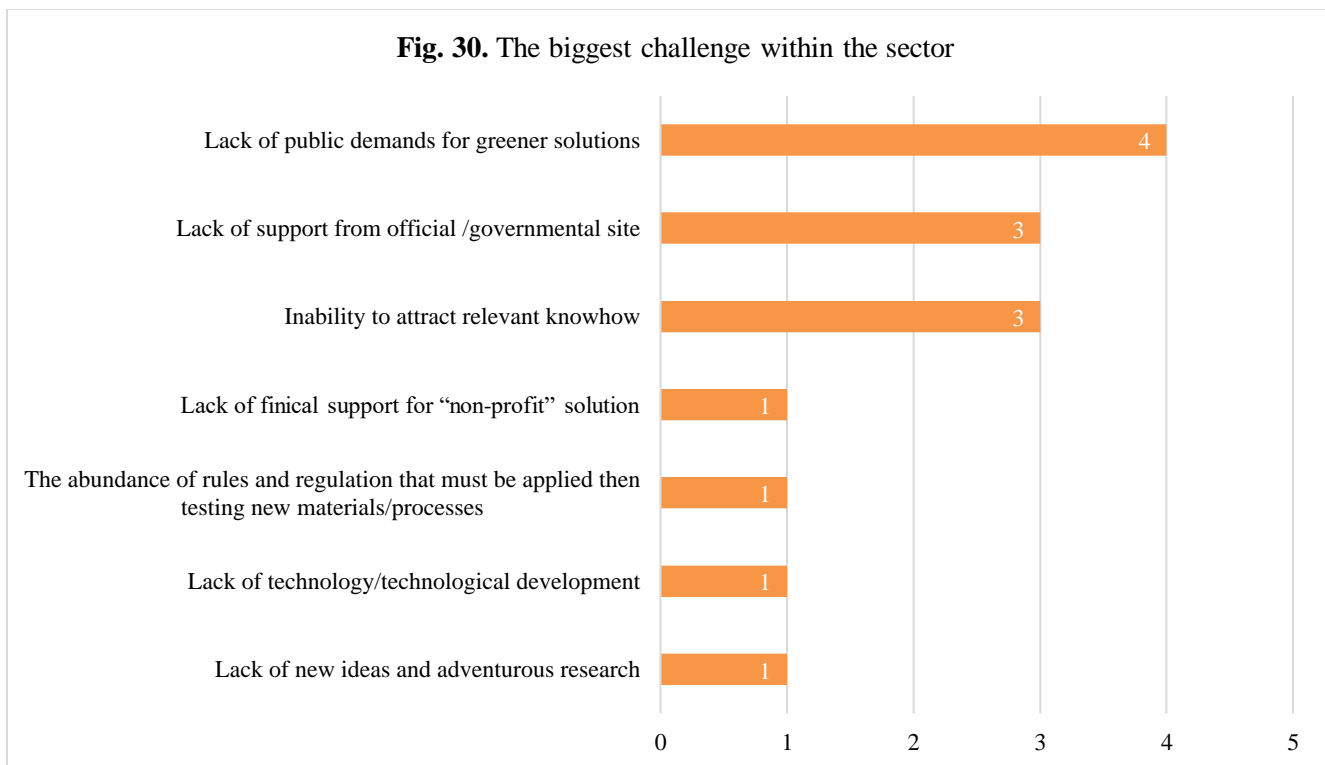
The ability to design and implement a solution (problem-solving) is seen as a major lack of soft skills (especially in the green building sector). The ability to work independently is relevant for companies operating in the renewable energy sector. Meanwhile, critical thinking and the ability to improve on existing ideas skills are relevant for SMEs operating in waste management and green building sectors. For companies operating in the clean transportation sector network capacity skills and communicative skills like a foreign language or the ability to present cases both oral and in-text is seen as the most relevant skills.

**Fig. 29.** Soft skills that newly graduates are lacking when they apply for a job



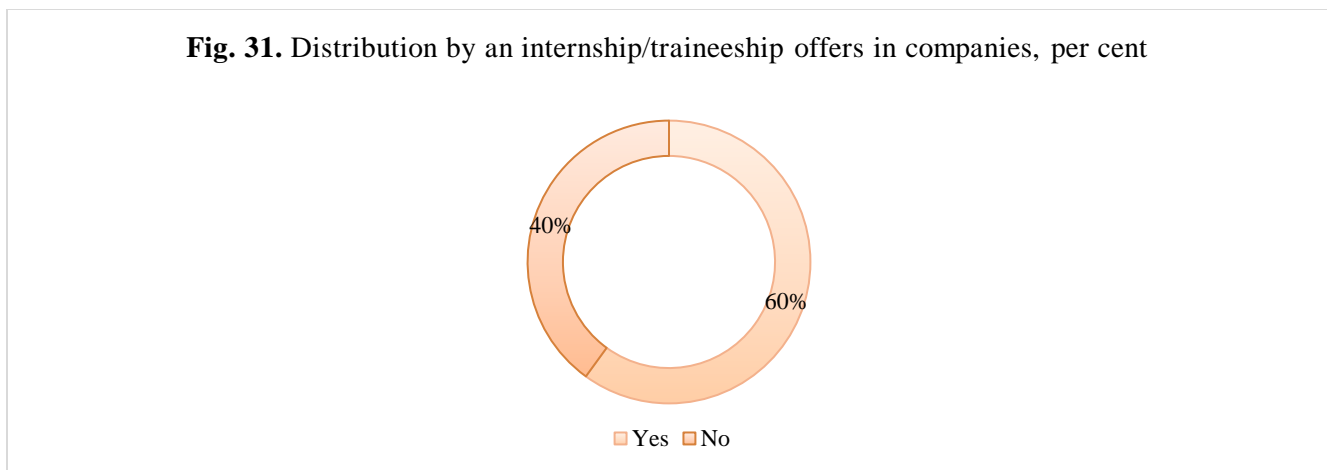
SMEs operating in Sweden are facing a lack of public demand for greener solutions and this aspect is seen as the biggest challenge within the water management sector (see Fig. 30).

**Fig. 30.** The biggest challenge within the sector



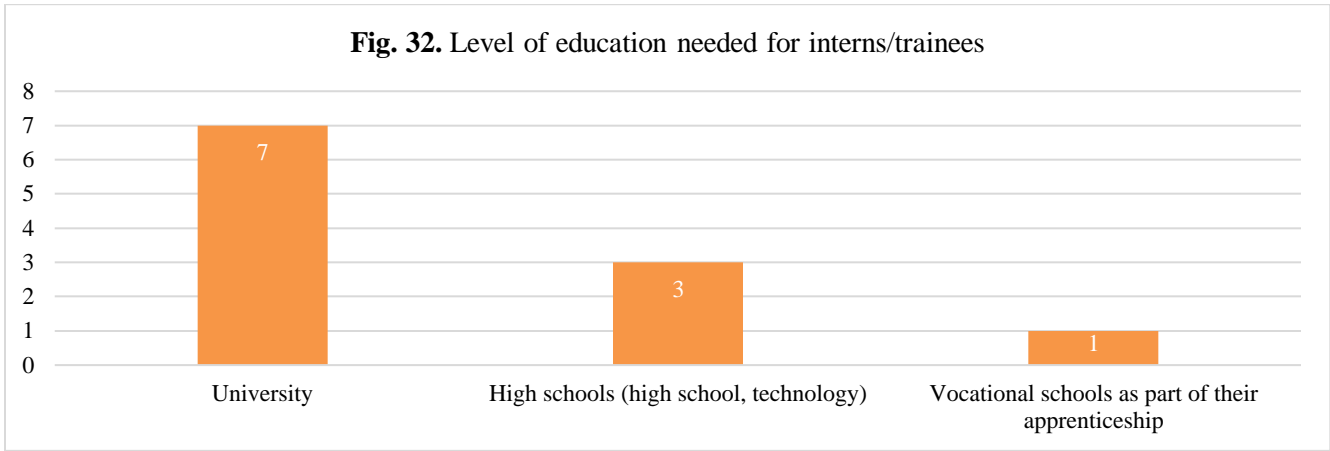
SMEs operating in renewable energy and green building sectors faces with lack of public demands for greener solutions. Meanwhile, SMEs operating in the clean transportation sector as the biggest challenge see a lack of support from official/governmental sites. The main challenges in the waste management sector are lack of technology/technological development, lack of financial support for “non-profit” solutions, inability to attract relevant know-how. Bureaucratic permit processes for new developments are also mentioned by SMEs operating in Sweden.

Swedish SMEs were asked about internship/traineeship possibilities in their companies. The distribution of answers can be seen in Fig. 31.

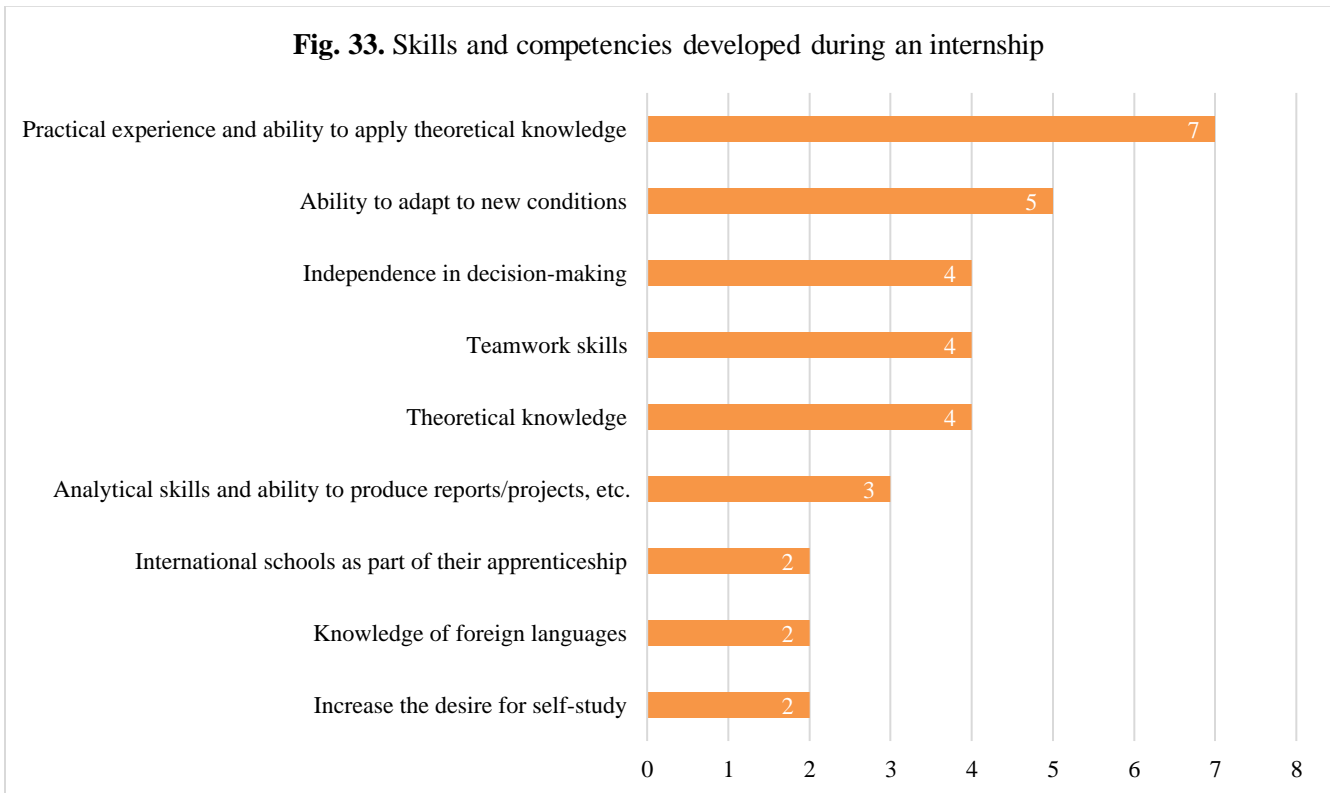


SMEs operating in the waste management sector offer internships/traineeships for students rarely (33 %). SMEs operating in the clean transportation sector more often (100 %) propose such a possibility. The main reasons for internship/traineeship proposal in the renewable energy sector are the support of young people; recruitment possibility; good contacts with the universities in the region and good help in projects. SMEs operating in waste management propose internship/traineeship possibilities for students to gain new ideas and present the company to the next generation. The main reasons for internship/traineeship proposal in the green building sector are to be able to use the knowledge; test young people, get help with simpler work tasks, get diversity at the office and help youngsters to learn the market. SMEs operating in the clean transportation sector propose internship/traineeship for students due to such reasons: to test students, to get help to investigate a special issue/question of interest. The main reasons for not proposing internship/traineeship possibilities are lack of time, lack of resources, company size.

Respondents (in which companies there are internship/traineeship possibilities) were asked to specify at what level of education do they accept interns/trainees (see Fig. 32).



As can be seen from Fig.32, interns/trainees from universities and high schools most likely can apply for internship/traineeship. SMEs operating in waste management and clean transportation sectors accept interns/trainees only from universities. SMEs operating in the renewable energy sector more often accept interns/trainees from universities (50 %), but students from high schools or vocational schools can also be part of the internship process. SMEs were asked to identify which skills and competencies do they wish to develop by offering an internship. The distribution of answers can be seen in Fig. 33.



SMEs proposing internship/traineeship possibilities for students more often wish to develop their practical experience and ability to apply theoretical knowledge (especially in renewable energy and green building sectors), ability to adapt to new conditions (these skills are relevant only in renewable energy and green building sectors), independence in decision-making (these skills are relevant only in renewable energy and green building sectors), theoretical knowledge (relevant mostly for SMEs operating in waste management sector), analytical skills and ability to produce reports/projects, etc. (relevant mostly for SMEs operating in the clean transportation sector). During the internships, students can test and/or apply their theoretical knowledge in practice (mentioned 9 times), participate in daily company life (mentioned 6 times), test their ability to produce independent analyses, programs, classes (mentioned 5 times), and gain stress-free entry into the labour market (mentioned 1 time). It should be noted that if companies propose internship/traineeship possibilities, they also can employ interns/trainees at the end of internship/practice (100 % of SMEs indicated this possibility).

Respondents were asked if they notice education deficiencies preventing students from being employed directly after graduation. 80 % of respondents do not notice any education deficiency, 20 % indicated specified that some deficiencies exist. Existing deficiencies were explained as follows: when it comes to handling/solving complex societal challenges previous experiences from e.g. planning and/or implementation are valuable; there would be a need for more practical elements at university; no real-life experience.

SMEs representatives also were asked how they would like to influence the curricular of the educational system to meet the needs of their company for skilled labour. Respondents from the renewable energy sector pointed to the need for companies' involvement, a combination of theoretical and practical parts that leads to an understanding of what types of environment the planning decisions lead to, providing more examples. SMEs representatives operating in the waste management sector suggested giving more practical hands-on experience. Respondents from the green building sector proposed that the education system should be more practical-oriented, stressed the importance of internships and suggested to think more reuse. In order to make students more aware of the broad range of job opportunities that exist within the sector, respondents proposed to make it easier to communicate with students at the universities, reach out to companies outside the Urban green sector which are more in the industrial green sector, give examples of careers; organize trade shows for jobs, a listing of which companies hire for what skills, explain that within the sustainability/environment area are a wide range of possible job opportunities e.g. biodiversity and climate.

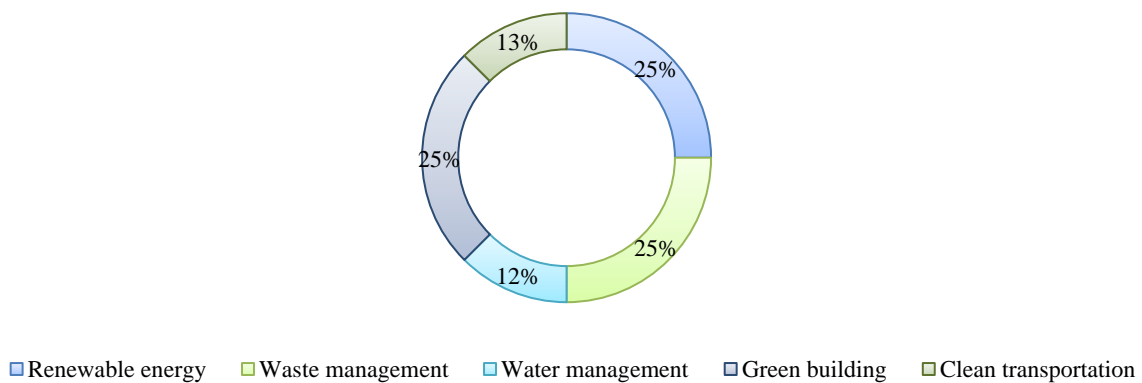
## 3.3 Lithuania



### 3.3 The situation in Lithuania

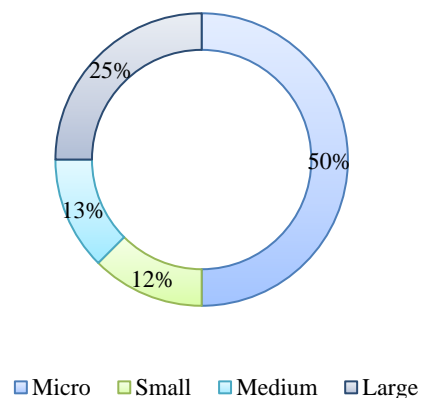
8 SMEs representatives from Lithuania took part in a survey. 25 % of respondents were operating in renewable energy, waste management and green building sectors (see Fig. 34).

**Fig. 34.** Distribution of respondents from Lithuania by sector, per cent



As can be seen from Fig. 34, 13 % of respondents were from water management and clean transportation sectors. In Fig. 35, there is shown the distribution of respondents by company size.

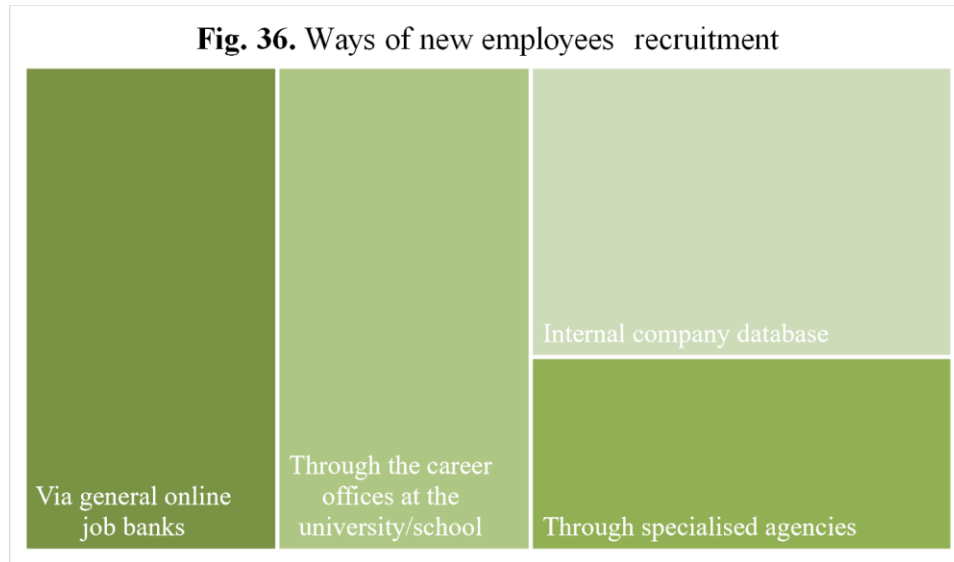
**Fig. 35.** Distribution of respondents from Lithuania by company size, per cent



50 % of respondents were micro-sized (less than 10 employees). Only 12 and 13 % of respondents were from small and medium-sized companies. Companies operating in water management and clean

transportation sectors more often are large-sized (100 % of them). Meanwhile, companies operating in the green building sector are micro-sized.

Respondents were asked how they recruit new employees. The distribution of answers is shown in Fig. 36.



As can be seen from Fig. 36, usually companies recruit employees via general online job banks (mentioned 3 times), through the career offices at the university/school (mentioned 3 times), internal company database (mentioned 3 times), through specialized agencies (mentioned 2 times).

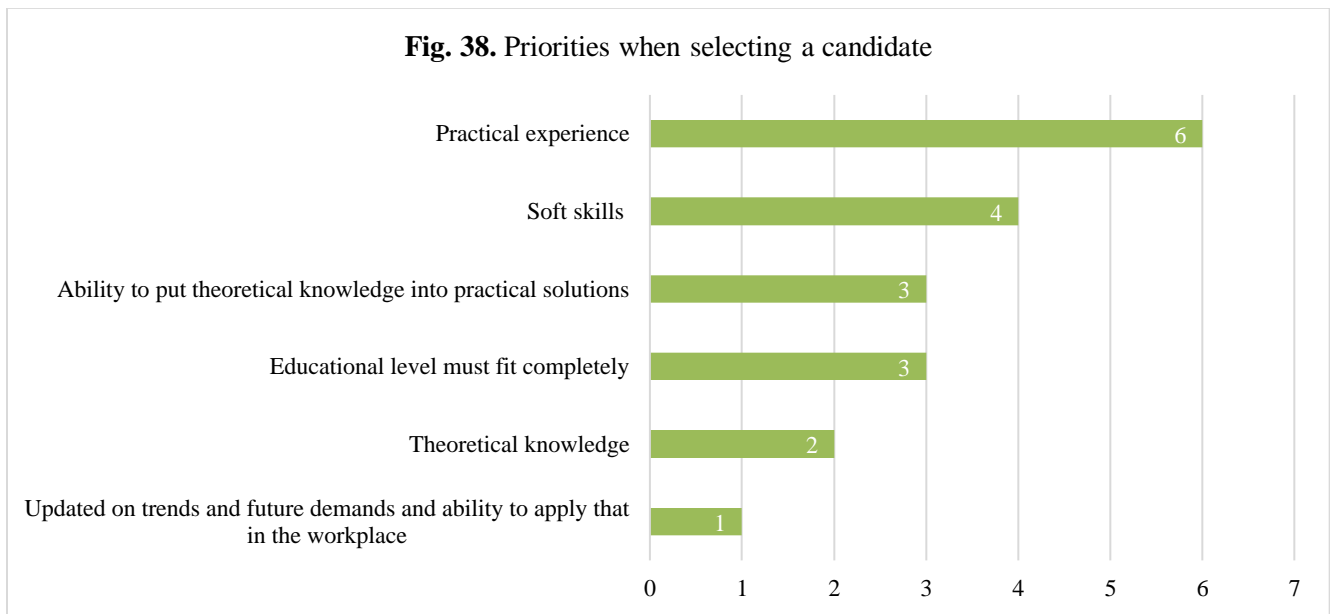
New employees' recruitment via general online job banks is very popular in water management (100 % of companies use this way). Companies operating in the green building sector more often recruit new employees through an internal company database.

Respondents were asked to identify which field of study they are most likely to hire from. The distribution of answers can be seen in Fig. 37.

Companies operating in Lithuania most likely to hire graduates from Engineering and technology (Natural sciences at university level) study field, Vocational training, Sales and marketing, Logistics and economics, System design and IT. Public administration study fields are not so popular for hire.



Respondents were asked to select priorities when selecting a candidate for a position in their company. The distribution of answers can be seen in Fig. 38.

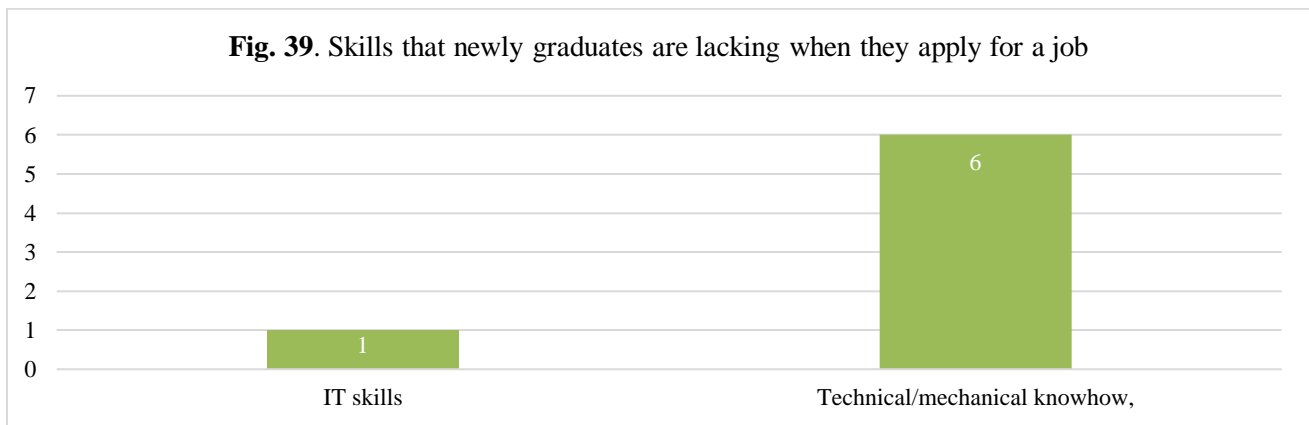


As can be seen from Fig. 38, respondents from Lithuania prioritize practical experience (75 %), soft skills such as good communication skills, ability to network and adapt to the culture of the workplace (50 %), ability to put theoretical knowledge into practical solutions (38 %), the educational level must fit

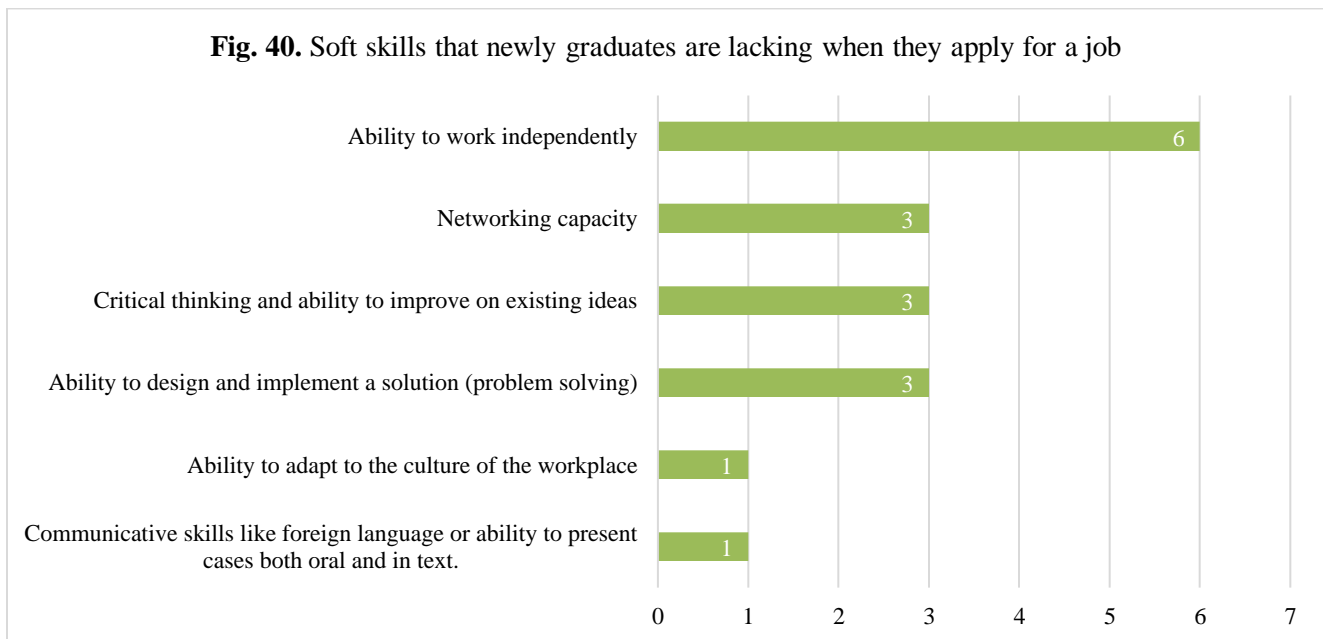
completely (38 %). Soft skills and the ability to put theoretical knowledge into practical solutions are more relevant to companies operating in the renewable energy sector.

Respondents were asked to identify which skills do they experience newly graduates are lacking when they apply for a job in their company (see Fig. 39).

Newly graduates more often are lacking technical/mechanical know-how and IT skills. Lack of theoretical knowledge skills has not been chosen by any representative of Lithuanian SMEs. Lack of managerial and project management knowledge skills was mentioned by representatives.

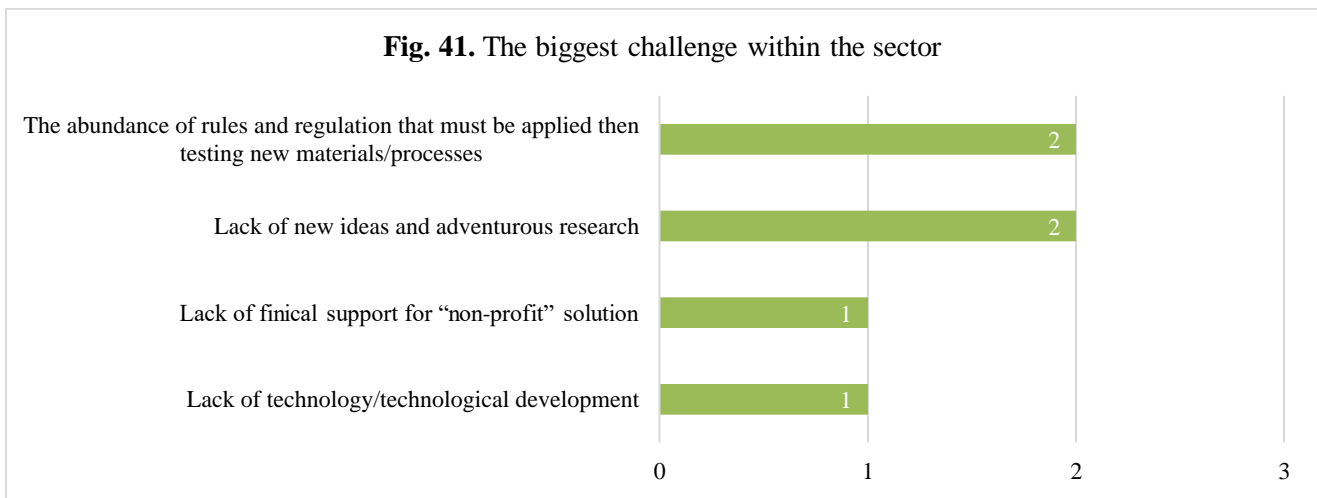


Respondents were asked to identify which skills do they experience newly graduates are lacking when they apply for a job in their company (see Fig. 40).

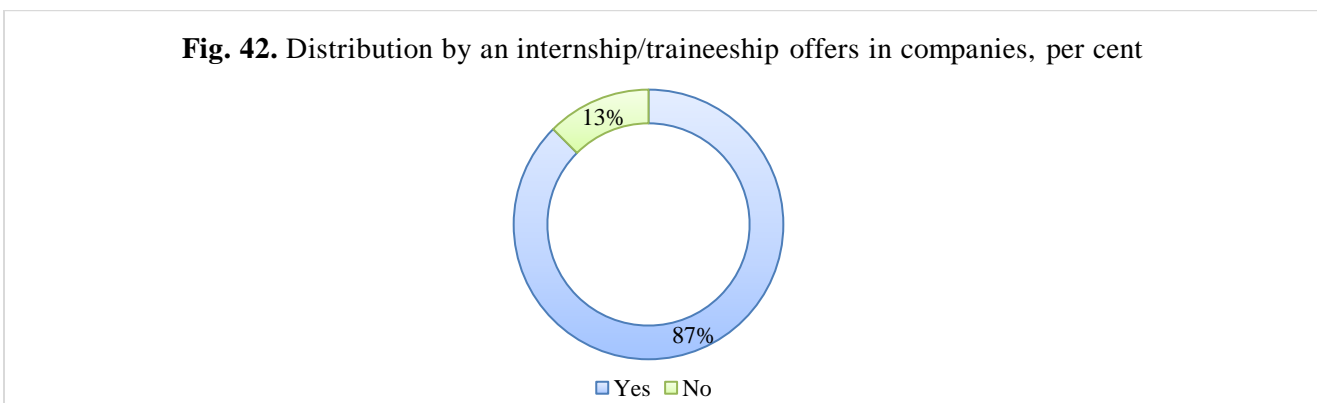


The ability to work independently is seen as a major lack of soft skills. It is glad to know that newly graduates do not lack the ability to work in a team (this aspect has not been chosen by any representative). Communicative skills like a foreign language or the ability to present cases both oral and in-text are relevant for companies operating in the renewable energy sector.

SMEs operating in Lithuania are facing an abundance of rules and regulations that must be applied then testing new materials/processes and this aspect is seen as the biggest challenge within renewable energy and green building sectors (see Fig. 41).



SMEs operating in the waste management sector face a lack of financial support for “non-profit” solutions. Meanwhile, SMEs operating in the clean transportation sector as the biggest challenge see a lack of new ideas and adventurous research. Environment, different application of rules and regulations separation are also mentioned by SMEs representatives operating in Lithuania. Lack of support from official/governmental sites and lack of public demands for greener solutions are not the biggest challenges within industries.

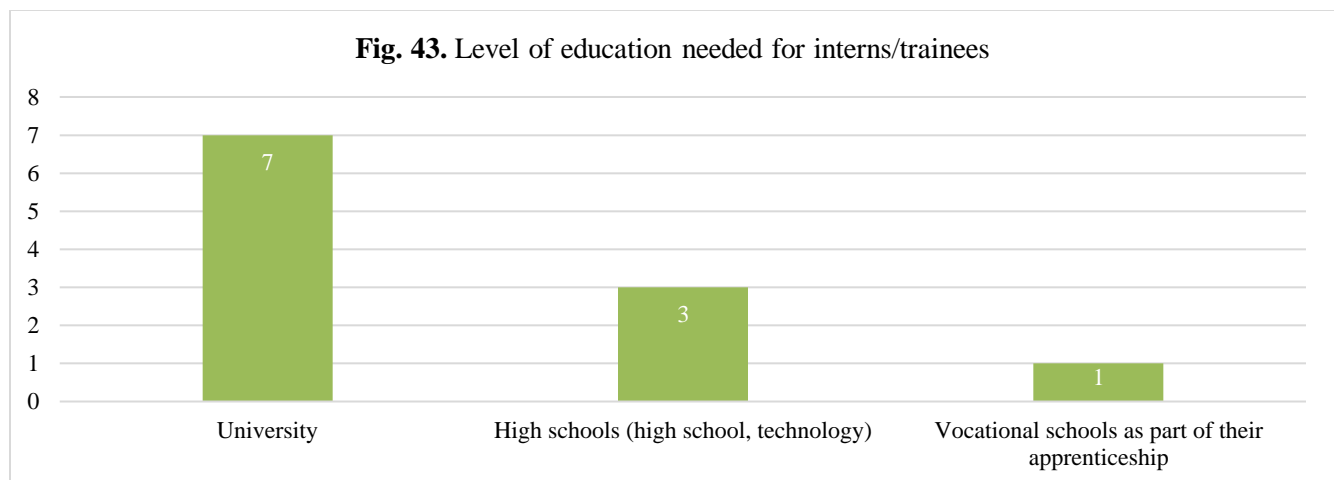


Lithuanian SMEs were asked about internship/traineeship possibilities in their companies. The distribution of answers can be seen in Fig. 42.

SMEs operating in the clean transportation sector do offer internships/traineeships for students. In other sectors such possibilities for students exist.

The main reasons for the internship/traineeship proposal in the renewable energy sector are new approach is needed to current jobs, opportunity to get familiar with trainee and cooperate with him/her in the future, raising the employer's awareness. SMEs operating in waste management propose internship/traineeship possibilities for students in order to test practical work. The main reason for the internship/traineeship proposal in the water management sector is to attract new employees. SMEs operating in the green building sector propose internship/traineeship for students due to such reasons: the need for new ideas and competencies and to grow an employee for the future.

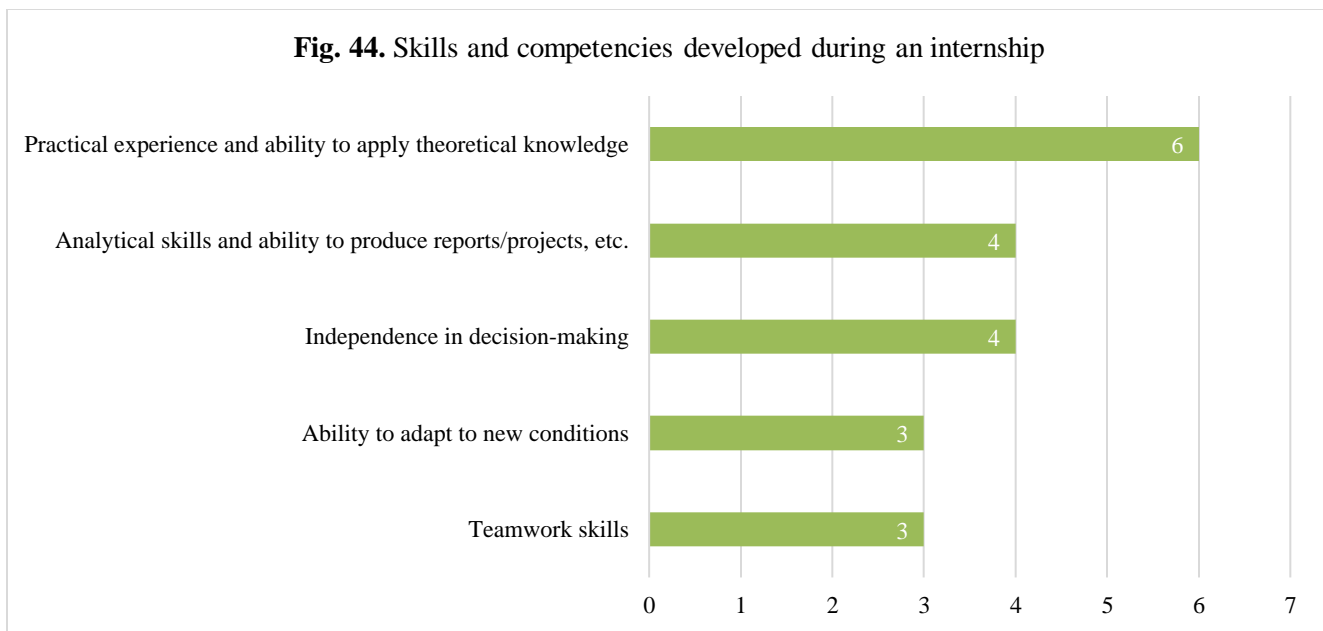
Respondents (in which companies there are internship/traineeship possibilities) were asked to specify at what level of education do they accept interns/trainees (see Fig. 43).



As can be seen from Fig.43, interns/trainees from universities and high schools most likely can apply for internship/traineeship. SMEs operating in the green building sector accept interns/trainees from vocational schools. SMEs were asked to identify which skills and competencies do they wish to develop by offering an internship. The distribution of answers can be seen in Fig. 44.

SMEs proposing internship/traineeship possibilities for students more often wish to develop their practical experience and ability to apply theoretical knowledge (especially in waste management and green building sectors), analytical skills and ability to produce reports/projects (especially in the renewable energy sector), independence in decision-making (these skills are relevant in renewable

energy, waste management and green building sectors), ability to adapt to new conditions (relevant to SMEs operating in renewable energy and waste management sectors), teamwork skills (relevant to SMEs operating in renewable energy and waste management sectors). During the internships, students can test and/or apply their theoretical knowledge in practice (mentioned 6 times), participate in daily company life (mentioned 6 times), test their ability to produce independent analyses, programs, classes (mentioned 4 times), and gain stress-free entry into the labour market (mentioned 2 times). 75 % of SMEs after the end of internship/practice can employ interns/trainees. This possibility is more often used in renewable energy, green building and water management sectors.



Respondents were asked if they notice education deficiencies preventing students from being employed directly after graduation. 67 % of respondents do not notice any education deficiency, 33 % indicated specified that some deficiencies exist. Existing deficiencies were explained as follows: lack of knowledge or practical skills; lack of initiative in communicating information about existing jobs, encouraging students to apply; lack of project management.

SMEs representatives also were asked how they would like to influence the curricular of the educational system to meet the needs of their company for skilled labour. Respondents from the renewable energy sector pointed that they cooperate with university lecturers, are looking for specialists there, cooperate with educational institutions (we provide consultations on program issues, developing joint projects). SMEs representatives operating in the waste management sector invites schools to join the campaigns of companies. Respondents from the green building sector have closer connections with

academia. SMEs representatives operating in the clean transportation sector visit universities, tell students about the available opportunities. In order to make students more aware of the broad range of job opportunities that exist within the sector, share job possibilities for students, organizations via remote meetings, recommend the best candidates for companies. Representatives stressed the need of being more proactive, the importance of youth education from young days and their skills development.

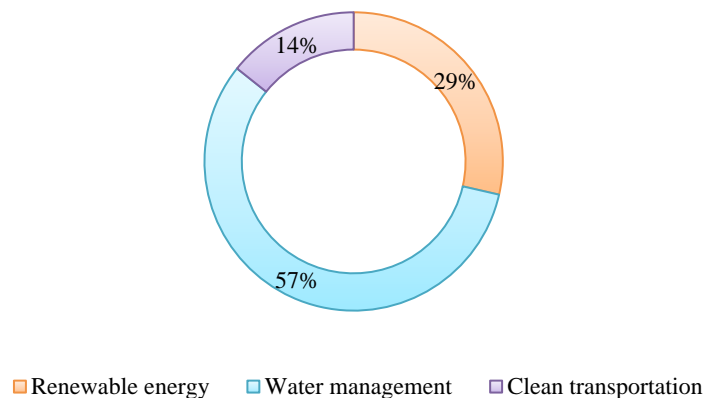


## 3.4 Poland

## 3.4 The situation in Poland

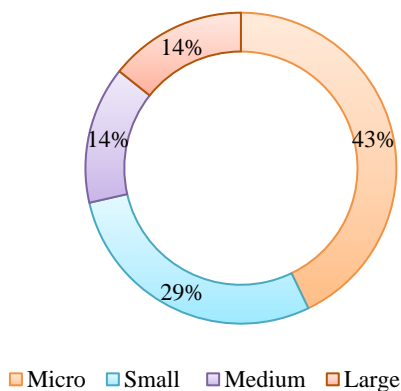
7 SMEs representatives from Poland took part in a survey. 57 % of respondents were operating in the water management sector (see Fig. 45).

**Fig. 45.** Distribution of respondents from Poland by sector, per cent



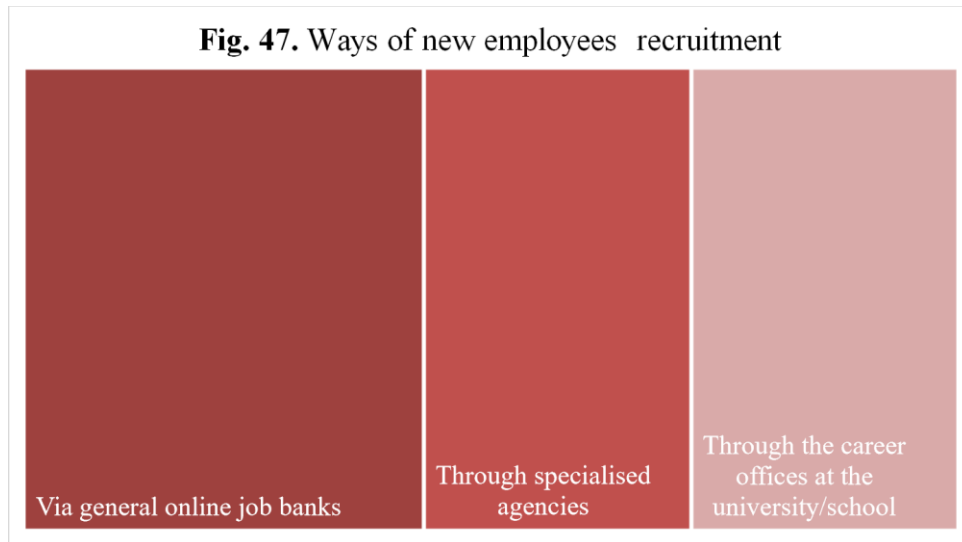
As can be seen from Fig. 45, none of the respondents were from green building and waste management sectors. Only 14 % of respondents were from the clean transportation sector and 29 % - from the renewable energy sector. In Fig. 46, there is shown the distribution of respondents by company size.

**Fig. 46.** Distribution of respondents from Poland by company size, per cent



43 % of respondents were from micro-sized (less than 10 employees). 29 % of respondents were from small-sized (less than 50 employees) companies. Companies operating in the clean transportation sector more often are small-sized (100 % of them).

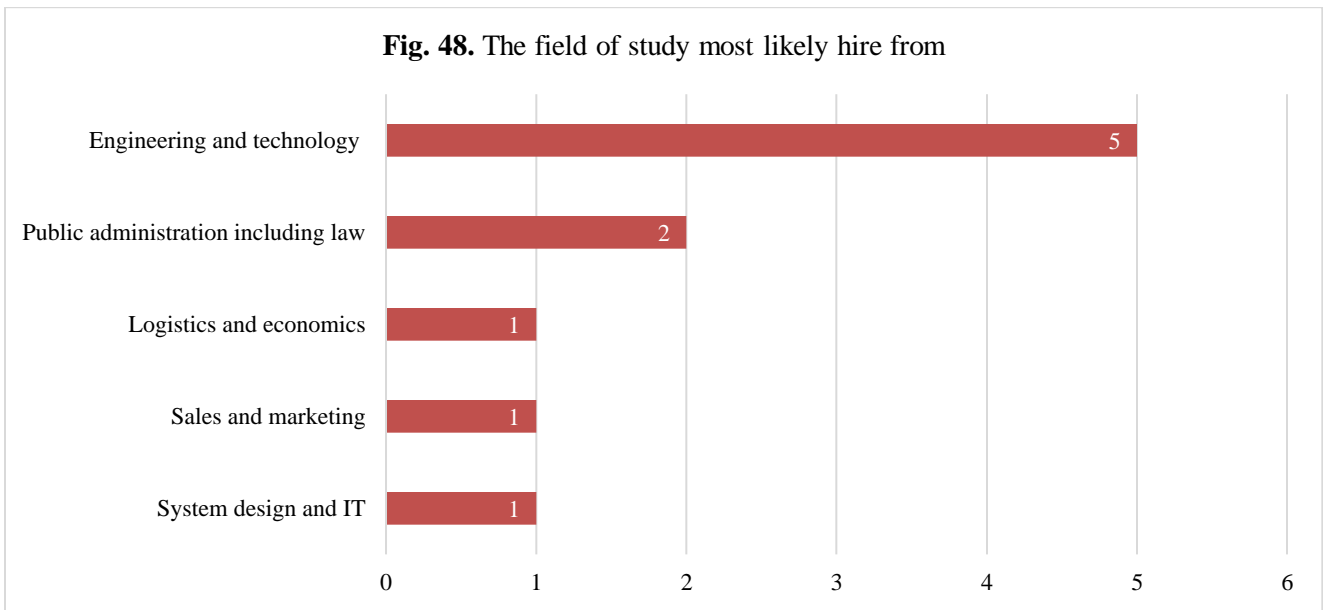
Respondents were asked how they recruit new employees. The distribution of answers is shown in Fig. 47.



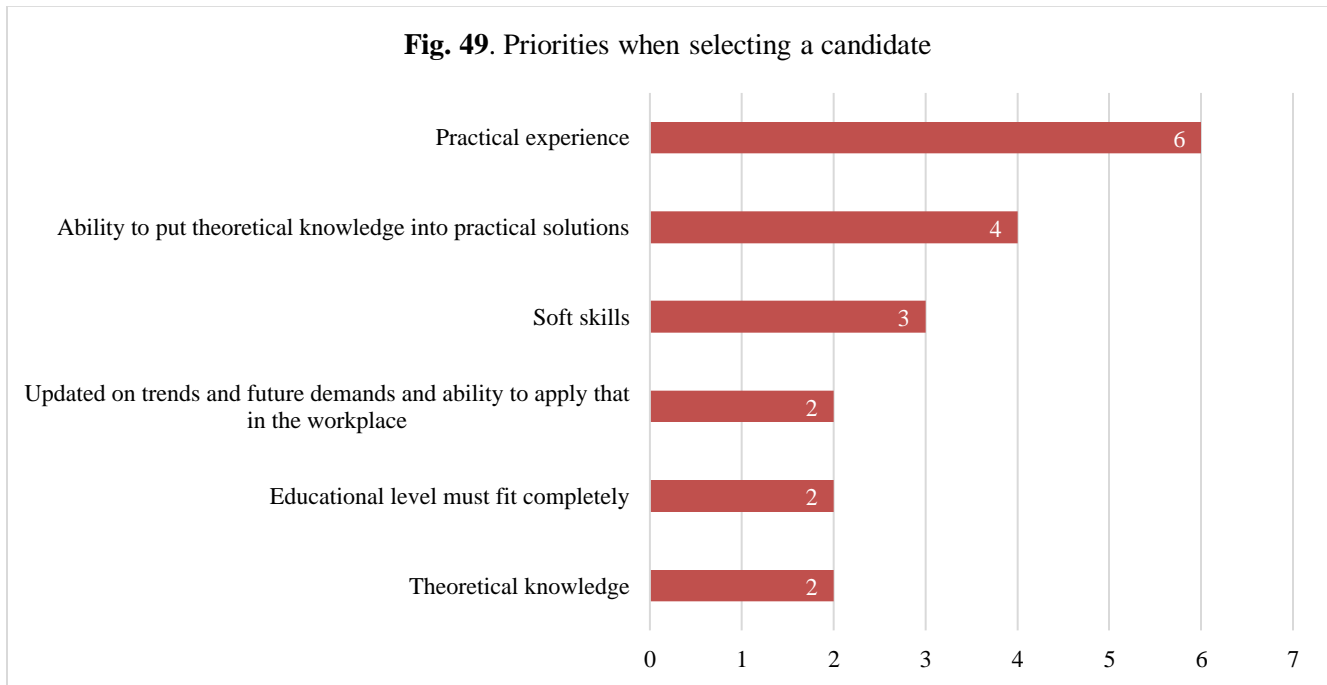
As can be seen from Fig. 47, usually companies recruit employees via general online job banks (mentioned 3 times), through the career offices at the university/school (mentioned 2 times), through specialized agencies (mentioned 2 times). Other recruitment possibilities are own network of contacts, industry and recommendations. New employees' recruitment via general online job banks is very popular in water management (100 % of companies use this way).

Respondents were asked to identify which field of study they are most likely to hire from. The distribution of answers can be seen in Fig. 48.

Companies operating in Poland most likely to hire graduates from Engineering and technology (Natural sciences at the university level) study field, Public administration, Sales and marketing, Logistics and economics, System design and IT. Vocational training study fields are not so popular for hire. Other study fields which are relevant to SMEs are Ocean Engineering and Shipbuilding, Biology.



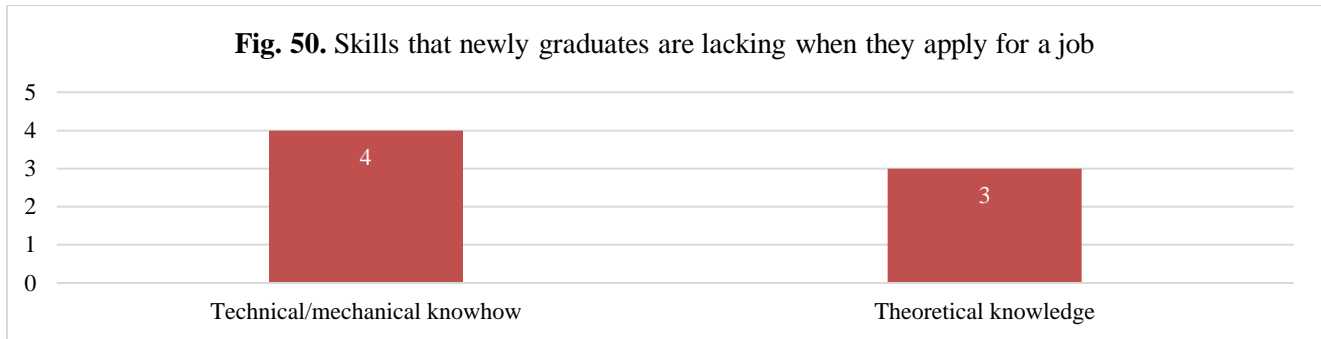
Respondents were asked to select priorities when selecting a candidate for a position in their company. The distribution of answers can be seen in Fig. 49.



As can be seen from Fig. 49, respondents from Poland prioritize practical experience (86 %), ability to put theoretical knowledge into practical solutions (57 %), soft skills such as good communication skills, ability to network and adapt to the culture of the workplace (43 %), updated on

trends and future demands and ability to apply that in the workplace (29 %), the educational level must fit completely (29 %), theoretical knowledge (29 %).

Respondents were asked to identify which skills do they experience newly graduates are lacking when they apply for a job in their company (see Fig. 50).

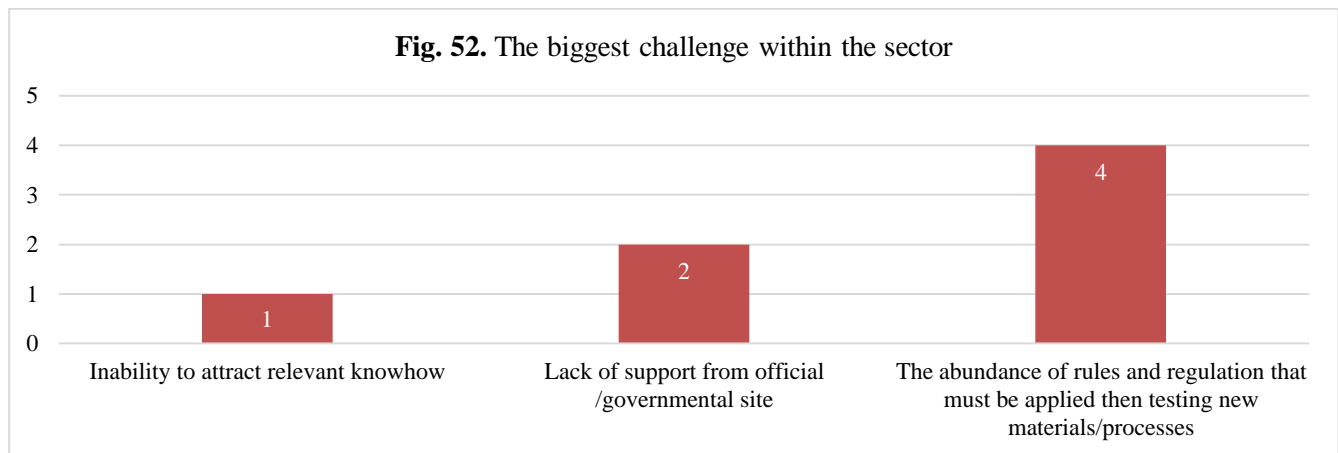


Newly graduates more often are lacking technical/mechanical know-how and theoretical knowledge. Lack of IT skills has not been chosen by any representative of Polish SMEs. Representatives also indicated that some industry school graduates have problems with the practical use of theoretical knowledge, including technical drawing and lack of knowledge related to completing documents in the construction process exist. Respondents were asked to identify which skills do they experience newly graduates are lacking when they apply for a job in their company (see Fig. 51).

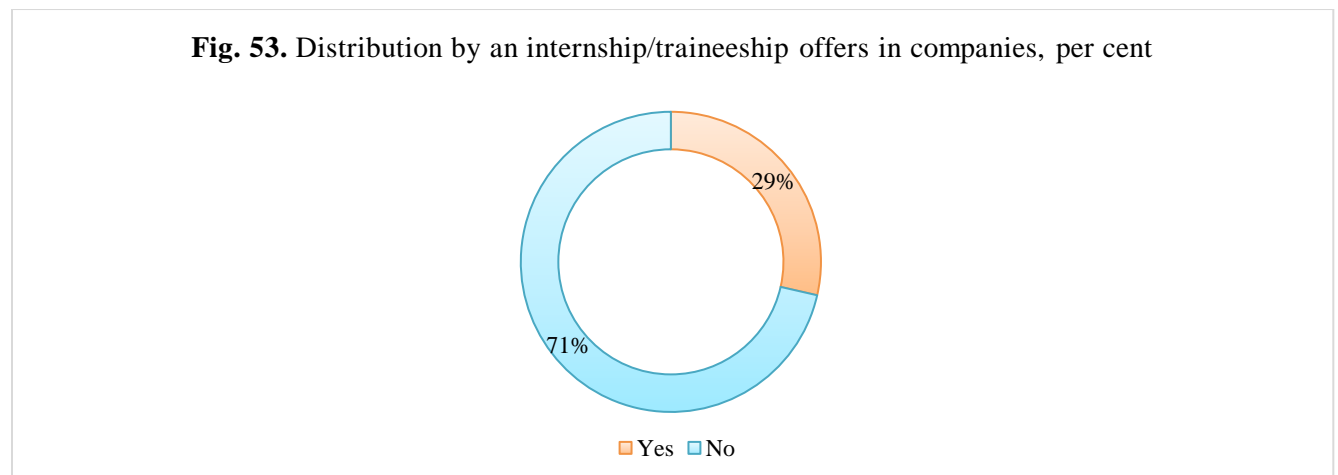


The ability to work independently is seen as a major lack of soft skills. It is glad to know that newly graduates do not lack network capacity (this aspect has not been chosen by any representative). The ability to work independently is a very relevant skill for companies operating in the renewable energy sector.

SMEs operating in Poland are facing an abundance of rules and regulations that must be applied then testing new materials/processes and this aspect is seen as the biggest challenge within the water management sector (see Fig. 52).



SMEs operating in the water management sector face inability to attract relevant know-how. Meanwhile, SMEs operating in the clean transportation sector as the biggest challenge see the abundance of rules and regulations that must be applied then testing new materials/processes. Lack of support from official /governmental sites is also seen as a challenge for companies operating in the renewable energy sector in Poland.

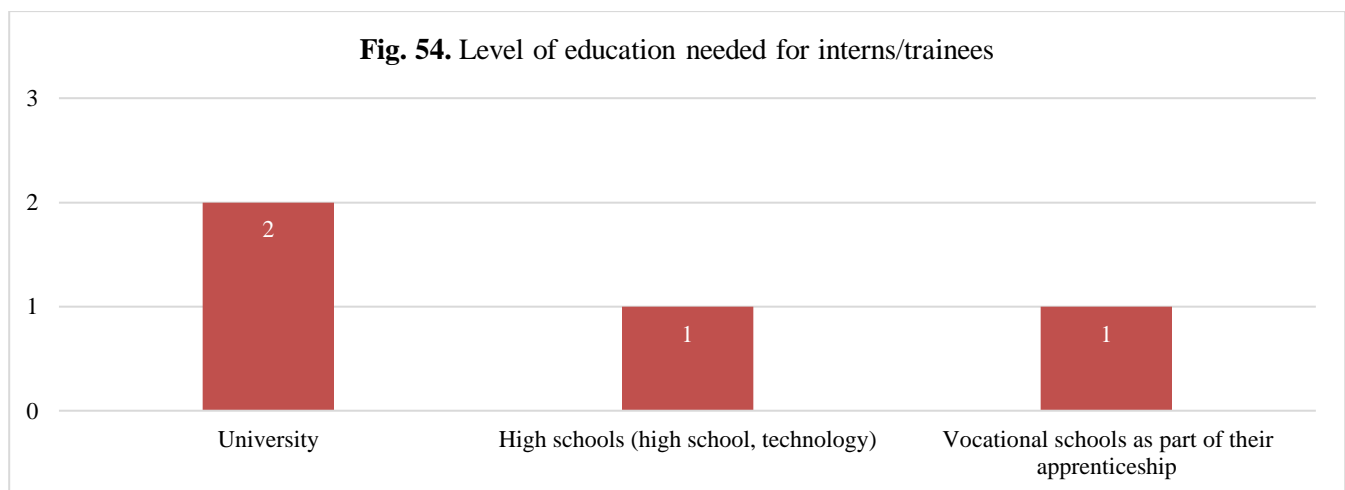


Polish SMEs were asked about internship/traineeship possibilities in their companies. The distribution of answers can be seen in Fig. 53.

As can be seen from Fig. 53, 71 % of SMEs do not propose internship/traineeship possibilities for students. Internship/traineeship possibilities more often exist in renewable energy (50 %) and clean transportation (100 %) sectors.

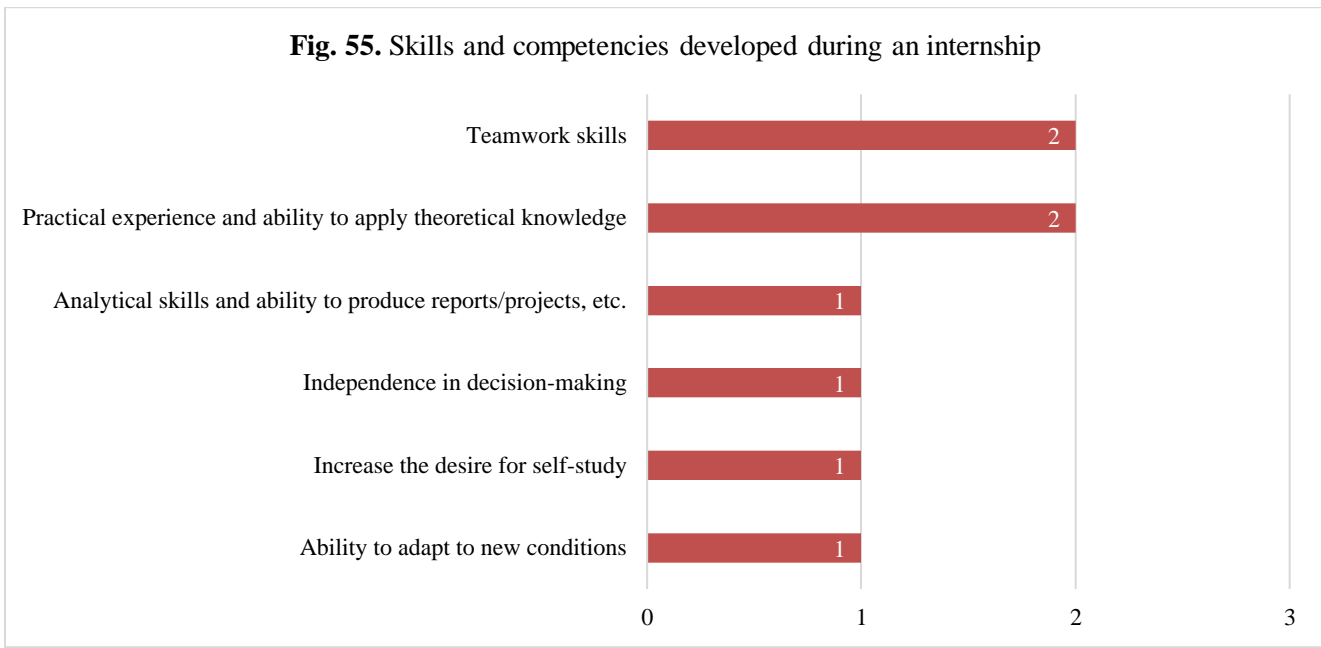
The main reasons for internship/traineeship proposal in the renewable energy sector are a multitude of projects, the desire to familiarize students with the practical side of the profession, awareness that the current staff must be replaced with a new one (ageing staff). SMEs operating in clean transportation propose internship/traineeship possibilities for students in order to transfer knowledge and experience, and thus acquiring a new employee in the future. SMEs operating in the water management sector do not propose internship/traineeship possibilities because they do not see any added value for the company.

Respondents (in which companies there are internship/traineeship possibilities) were asked to specify at what level of education do they accept interns/trainees (see Fig. 54).



As can be seen from Fig. 54, interns/trainees from universities most likely can apply for internship/traineeship. SMEs operating in the clean transportation sector accept interns/trainees from universities only. SMEs were asked to identify which skills and competencies do they wish to develop by offering an internship. The distribution of answers can be seen in Fig. 55.

**Fig. 55.** Skills and competencies developed during an internship



SMEs proposing internship/traineeship possibilities for students more often wish to develop their teamwork skills, practical experience and ability to apply theoretical knowledge, analytical skills and ability to produce reports/projects, independence in decision-making, increase the desire for self-study and ability to adapt to new conditions. During the internships, students can test and/or apply their theoretical knowledge in practice (mentioned 2 times), participate in daily company life (mentioned 2 times), test their ability to produce independent analyses, programs, classes (mentioned 2 times), and gain stress-free entry into the labour market (mentioned 1 time). 100 % of SMEs after the end of internship/practice can employ interns/trainees.

Respondents were asked if they notice education deficiencies preventing students from being employed directly after graduation. 43 % of respondents do not notice any education deficiency, 57 % indicated specified that some deficiencies exist. Existing deficiencies were explained as follows: no practical knowledge, a lot of theory and some of this theory is hard to translate into real work, inexperience; lack of commitment to work.

SMEs representatives also were asked how they would like to influence the curricular of the educational system to meet the needs of their company for skilled labour. Respondents from the renewable energy sector pointed that they participate in consultations with industry schools and universities. SMEs representatives operating in the water management sector propose practice during studies and emphasize the difference in attitude toward work (“young people are focused on the convenience and they are less likely to adjust to the job). Respondents from the clean transportation



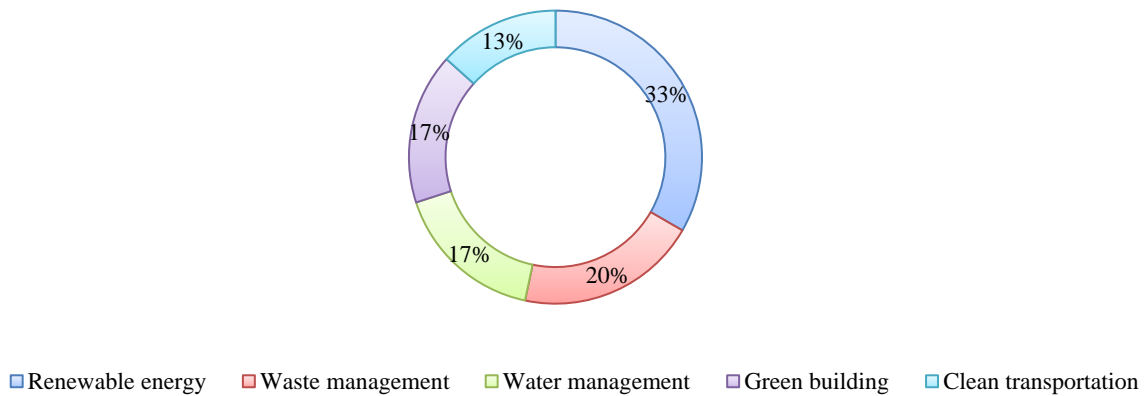
sector emphasize the need of introducing obligatory classes in environmental protection at universities, considering electromobility and its impact on changing environmental awareness (especially in fields related to the development of new technologies, economics), consultations with experts. In order to make students more aware of the broad range of job opportunities that exist within the sector, there is a need to propose a program of internships and apprenticeships in companies related to electromobility in cooperation with governmental and non-governmental organizations, transfer more knowledge and suggest finding a job in control bodies to gain the most experienced in the field and during the shorter time.

## 3.5 Germany

## 3.5 The situation in Germany

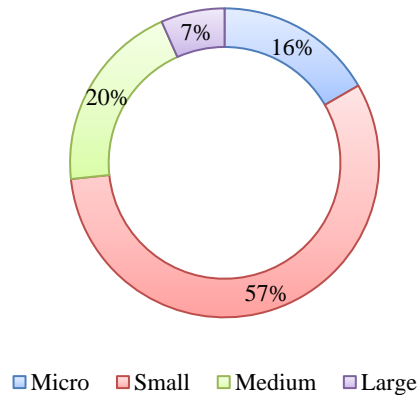
30 SMEs representatives from Germany took part in a survey. 33 % of respondents were operating in the renewable energy sector (see Fig. 56).

**Fig. 56.** Distribution of respondents from Germany by sector, per cent

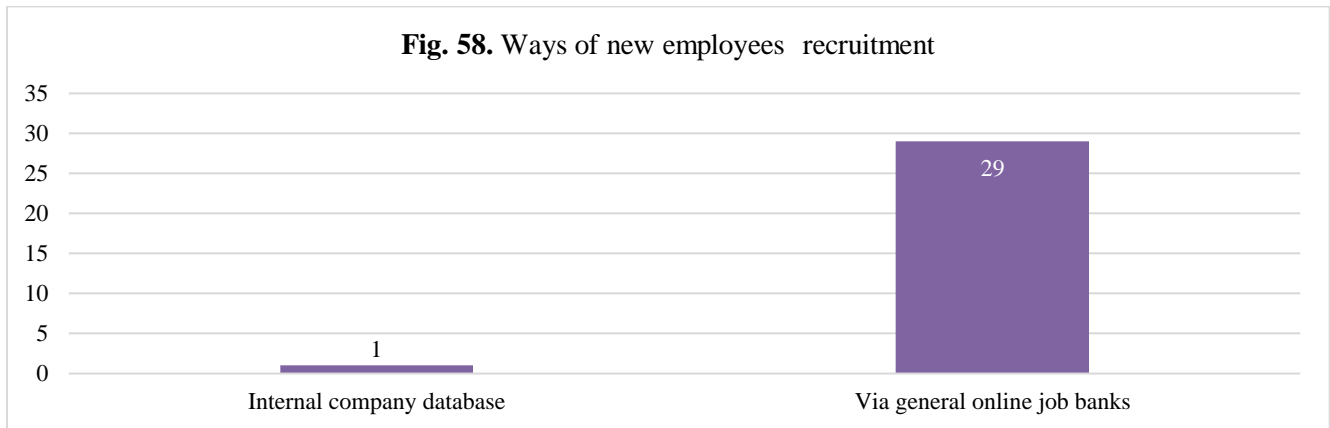


As can be seen from Fig. 56, only 13 % of respondents were operating in the clean transportation sector, 17 % were operating in green building and water management sectors, and 20 % in the waste management sector. In Fig. 57, there is shown the distribution of respondents by company size.

**Fig. 57.** Distribution of respondents from Germany by company size, per cent

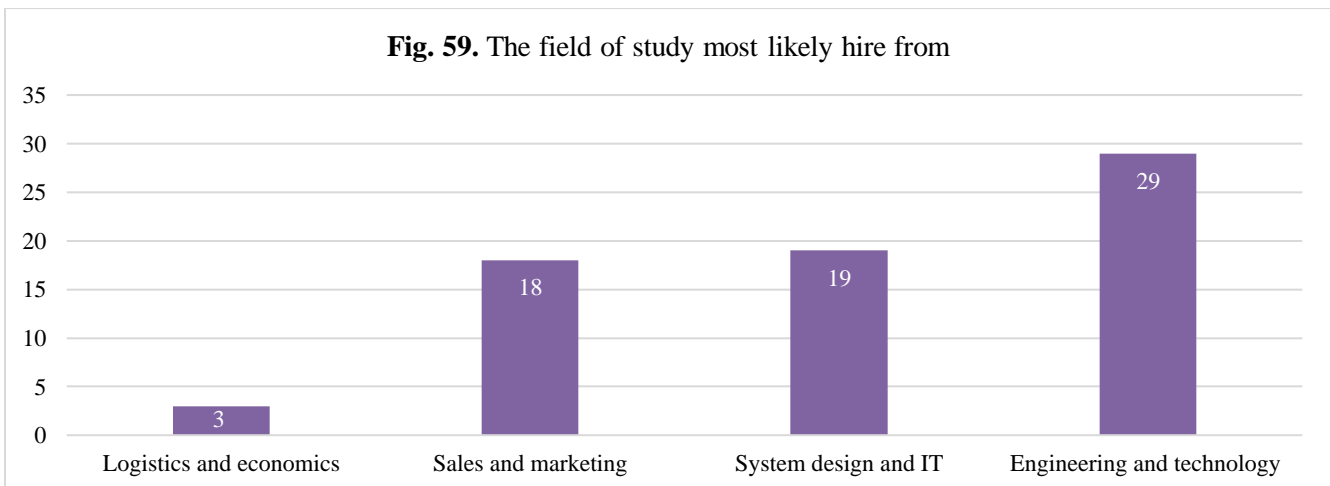


57 % of respondents were from small-sized (less than 50 employees). 20 % of respondents were from medium-sized (less than 250 employees) companies. Companies operating in the green building sector more often are micro-sized (80 %). Meanwhile, companies operating in the renewable energy sector are small or large-sized. Respondents were asked how they recruit new employees. The distribution of answers is shown in Fig. 58.



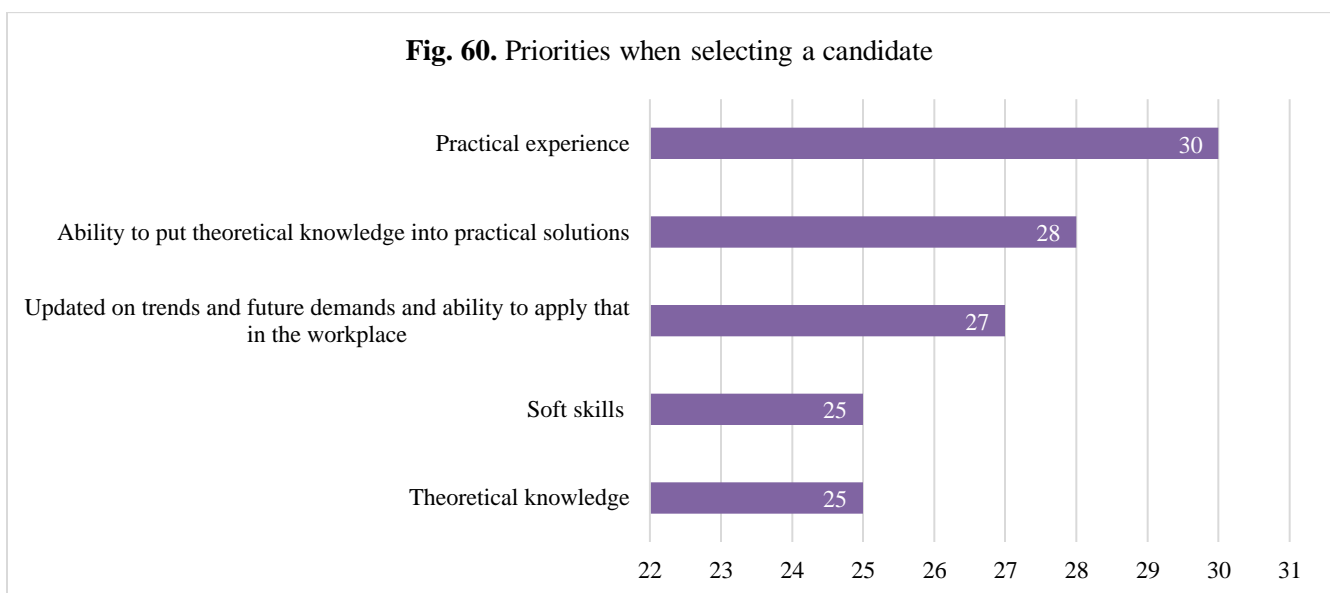
As can be seen from Fig. 58, usually companies recruit employees via general online job banks (mentioned 29 times) or internal company database (mentioned 1 time). Other ways for employee recruitment are the company’s website (mentioned 19 times). It could be generalized that German companies usually recruit employees via general online job banks or directly place information about a free vacation on the company’s webpage.

Respondents were asked to identify which field of study they are most likely to hire from. The distribution of answers can be seen in Fig. 59.



Companies operating in Germany most likely to hire graduates from Engineering and technology (Natural sciences at the university level) study field, Sales and marketing, System design and IT, Logistics and economics. Vocational training study fields are not so popular for hire. Other study fields which are relevant to SMEs – business administration/accounting, project developer in the field of wind energy onshore, landscape architecture, urban and regional planning, spatial development planning, specialists for recycling and waste management, commercial specialists and business economists, graphic design; electrical engineering and information technology.

Respondents were asked to select priorities when selecting a candidate for a position in their company. The distribution of answers can be seen in Fig. 60.

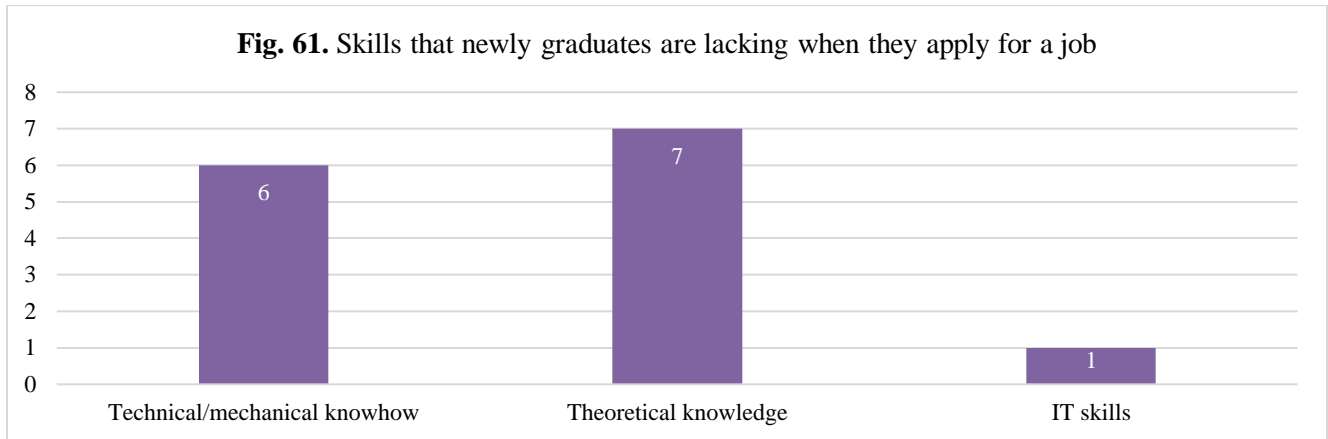


As can be seen from Fig. 60, respondents from Germany prioritize practical experience (100 %), ability to put theoretical knowledge into practical solutions (93 %), updated on trends and future demands and ability to apply that in the workplace (90 %), soft skills such as good communication skills, ability to network and adapt to the culture of the workplace (83 %), theoretical knowledge (83 %).

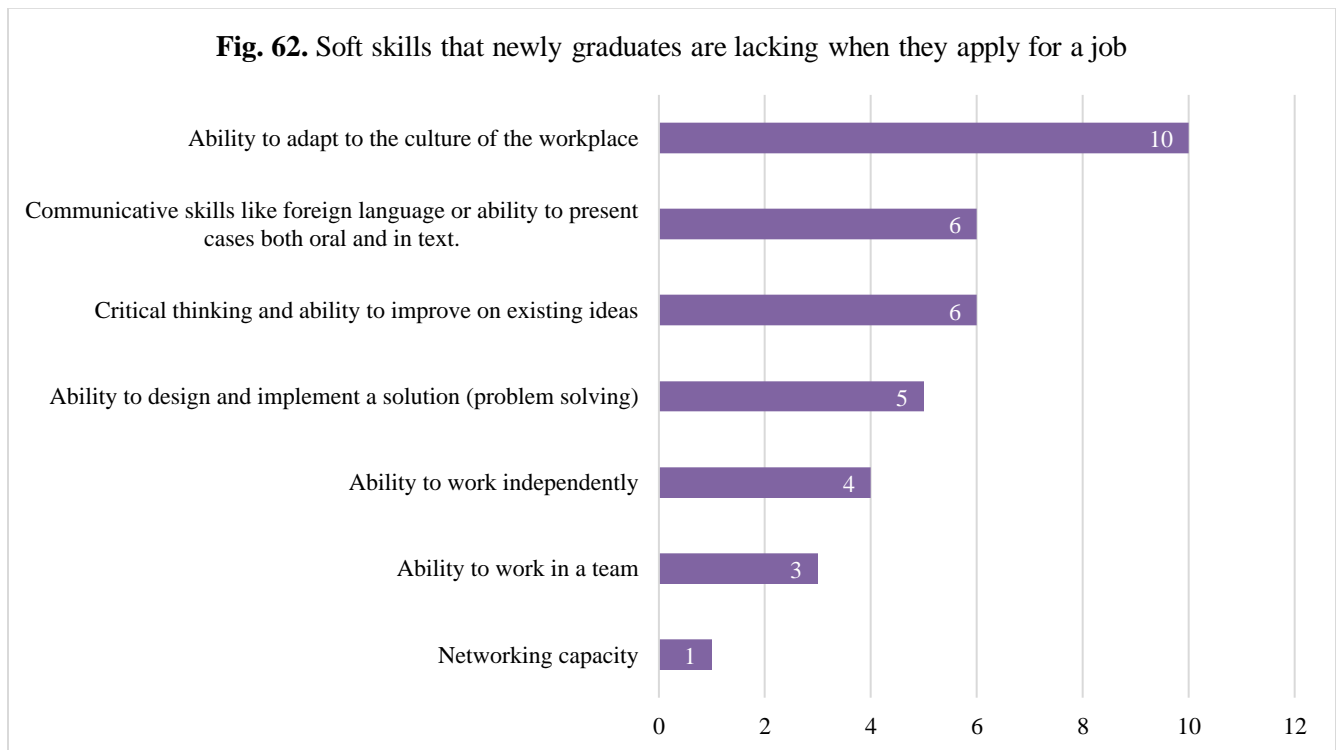
Respondents were asked to identify which skills do they experience newly graduates are lacking when they apply for a job in their company (see Fig. 61).

Newly graduates more often are lacking technical/mechanical know-how, theoretical knowledge and sometimes IT skills. Other skills which new graduates are lacking are: a lack of skills in technology application, adaptation and maintenance, identification with the company and its corporate values, better knowledge in the mathematical field would be desirable, hands-on experience and working knowledge,

cross-sectoral knowledge and innovation-driven thinking; flexibility and willingness to change the location for the employment, intercultural knowledge. But it should be noted that representatives also indicated that no shortcomings exist, and school and university graduates are well trained (mentioned 10 times).

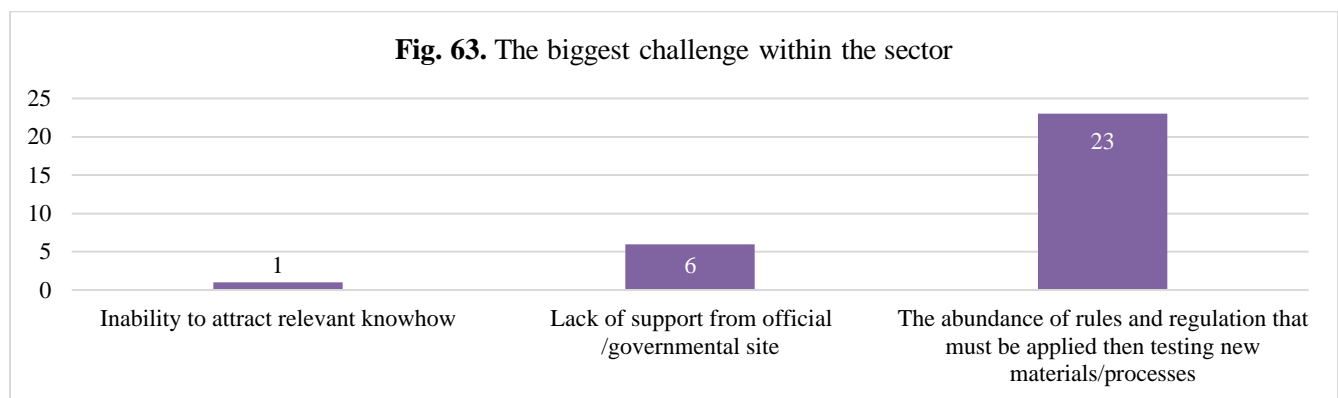


Respondents were asked to identify which skills do they experience newly graduates are lacking when they apply for a job in their company (see Fig. 62).

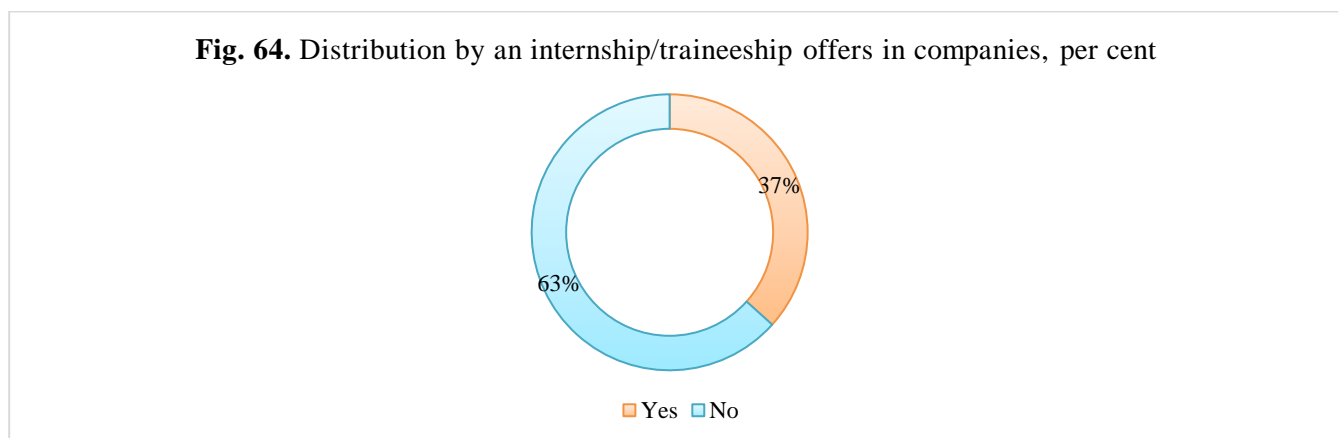


The ability to adapt to the culture of the workplace is seen as a major lack of soft skills. Representatives also indicated that new graduates are lacking such soft skills as: environmental awareness and leadership skills, identification with the company values (mentioned 4 times), flexibility regarding work tasks, willingness to change residence for the workplace, ability to accept criticism (mentioned 4 times) and willingness to learn or work hard (mentioned 2 times), commitment and motivation, intercultural knowledge, some students barely gain any experience abroad during their studies.

SMEs operating in Germany are facing an abundance of rules and regulations that must be applied then testing new materials/processes and this aspect is seen as the biggest challenge within the renewable energy sector (see Fig. 63).



SMEs operating in the renewable energy sector also face an inability to attract relevant know-how. Lack of new ideas and adventurous research, lack of technology/technological development, lack of financial support for “non-profit” solutions and lack of public demands for greener solutions do not exist in Germany.



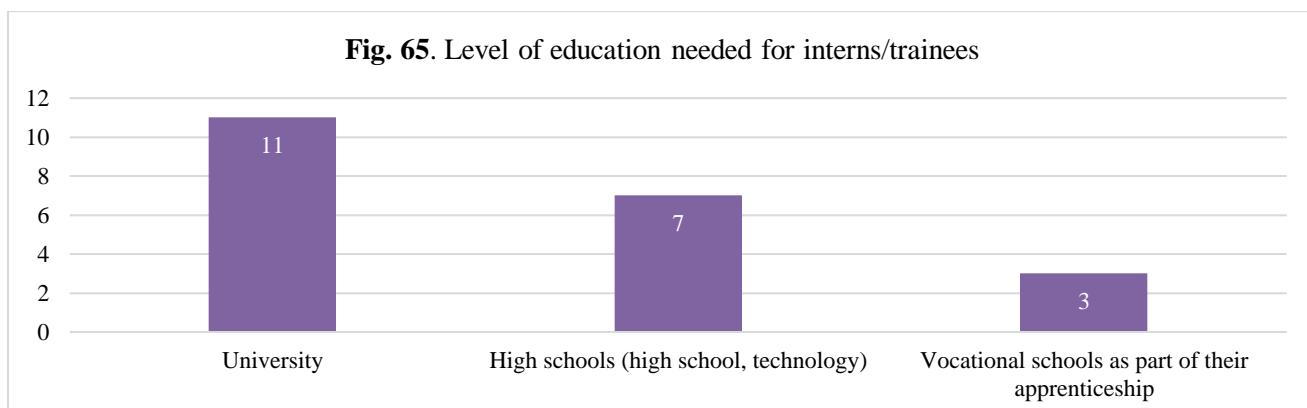
German SMEs were asked about internship/traineeship possibilities in their companies. The distribution of answers can be seen in Fig. 64.

As can be seen from Fig. 64, 63 % of SMEs do not propose internship/traineeship possibilities for students and only 37 % of them propose such a possibility. But this situation could be explained by restrictions related to the COVID-19 pandemic.

The main reasons for internship/traineeship proposal in the renewable energy sector are actively searching for future employees and build up a talent pool with interested candidates (mentioned 2 times), to attract young talents and employees to the company (mentioned 4 times). SMEs operating in waste management propose internship/traineeship possibilities for students to attract suitable candidates to the company at an early stage. Meanwhile, SMEs operating in the water management sector via internship try in order to attract young talents and bachelor graduates to the company (mentioned 2 times), to present themselves as an attractive employer. SMEs operating in clean transportation propose internship/traineeship possibilities for students because interns are flexible and can accompany and strengthen projects depending on their interests, to recruit employees and bind junior staff to the company (mentioned 2 times). SMEs operating in green building sector internships see as a good way of employee recruitment and securing young talents (mentioned 2 times) and valuable support. To sum up, usually, SMEs propose internships/traineeships for an attraction of young talents.

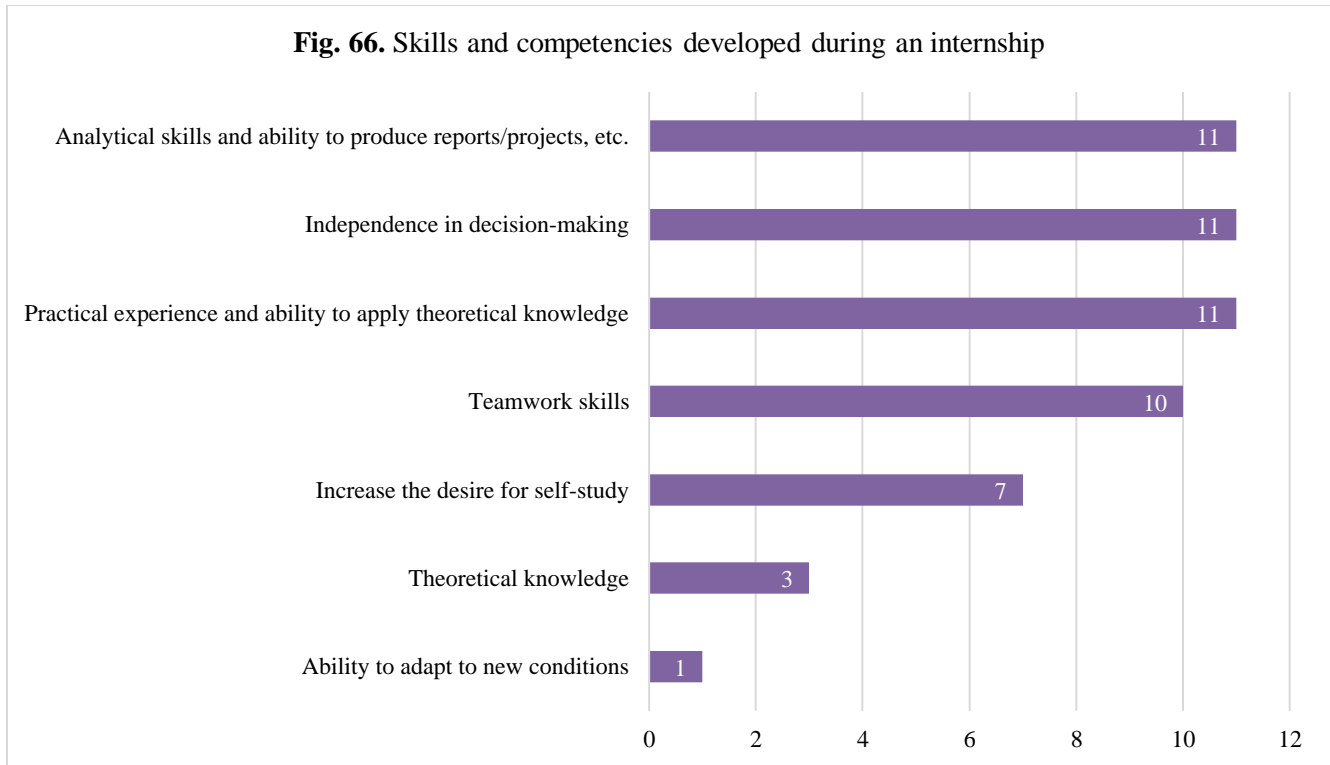
The main reasons for not proposing internship/traineeship possibilities are such: lack of personal resources; Corona crisis (mentioned 10 times), company size (mentioned 7 times), uncertain economic trends, lack of capacity, too expensive. One respondent stated that an internship can lead to permanent employment, but there is no guarantee of this. In principle, an internship should also be regarded as a temporary commitment to the company.

Respondents (in which companies there are internship/traineeship possibilities) were asked to specify at what level of education do they accept interns/trainees (see Fig. 65).





As can be seen from Fig. 65, interns/trainees from universities most likely can apply for internship/traineeship. SMEs were asked to identify which skills and competencies do they wish to develop by offering an internship. The distribution of answers can be seen in Fig. 66.



SMEs proposing internship/traineeship possibilities for students more often wish to develop their analytical skills and ability to produce reports/projects (100 %), independence in decision making (100 %), practical experience (100 %), teamwork skills, increase the desire for self-study, theoretical knowledge and ability to adapt to new conditions. During the internships, students can test and/or apply their theoretical knowledge in practice (mentioned 11 times), test their ability to produce independent analyses, programs, classes (mentioned 11 times), participate in daily company life (mentioned 10 times), and gain stress-free entry into the labour market (mentioned 2 times). Moreover, one respondent pointed that the first and foremost advantage is that they offer an opportunity to gain professional experience for students. 64 % of SMEs after the end of internship/practice can employ interns/trainees.

Respondents were asked if they notice education deficiencies preventing students from being employed directly after graduation. 100 % of respondents do not notice any education deficiency, but some problems or suggestions are expressed: lack of practical experience (mentioned 3 times) and skills on the applicants' side, some pilot actions are recommended that will increase the participation and

number of female students in university courses and jobs which have content related to the green economy, lack of communication and presentation skills.

SMEs representatives also were asked how they would like to influence the curricular of the educational system to meet the needs of their company for skilled labour. Respondents from the renewable energy sector pointed that focus on dual training models and practical courses of study should be paid, curricula and study courses need to be even more closely aligned with practice and the needs of the companies, more attention to and promotion of science and STEM-subjects at school, more insight into the practical work environment during their studies and not just complete one mandatory internship, companies should be involved in the preparation of the curricula and teaching content of the technical courses to ensure that the university curriculum is practice-oriented, internships should be a fixed part of the curricula and educational plans (mentioned 3 times), more promotion of the study programs and their attractiveness is needed. SMEs representatives operating in the waste management sector pointed that a stronger focus on practice and STEM-subjects and science in school would be desirable, digital technologies and the opportunities of e-learning must be given more priority, more attention to study-integrated training and digital skills. Respondents from the water management sector suggested focusing on mathematics and science subjects and expressed concern related to a need for rapid change to digital technologies and digitalization industry 4.0, practical experience development (mentioned 3 times), at least one internship should be mandatory, involvement of digital learning structures. Respondents from the green building sector propose to introduce more new courses of study dealing with sustainable processes, circular economy green concepts and sustainability solutions for business, economy and society need to be initiated (mentioned 2 times). Study programs must be adapted to the needs of companies and current developments; more autonomy for schools and universities towards local and regional school authorities should be placed, more involvement of the economy/industry/smart technologies in the core curricula of the universities, practical semesters should be maintained or included. Respondents from the clean transportation sector suggest that curricula and educational content for pupils and students must be more closely linked to the real working environment, internships in all technical courses should be mandatory, modular curricula and content requirements are practice-based and goal-oriented should be introduced.

To make students more aware of the broad range of job opportunities that exist within the sector, there is a need to include a mandatory internship semester in the study curriculum, participate in university career fairs or regional training and career exhibitions (mentioned 19 times), sponsoring lecture halls and inventory to attract attention, utilize various marketing opportunities (mentioned 11

times) or to initiate contacts with graduates via sharing community (e.g. [www.uniturm.de](http://www.uniturm.de)), make closer cooperation with colleges and universities (mentioned 4 times), via offerings for dual education (studying and working at the same time), communication via university magazines (mentioned 6 times), sponsoring of academic courses, dissemination of job offers via digital job boards and social media channels, posting job ads on university career portals, presence at public schools during project weeks.

# 4. Green skills – Key qualifications for green jobs

Green skills are often included in general, existing skill-sets. Taken together, green skills are generally composed of three dimensions: knowledge, skills, and attitudes/values.

In addition to job-specific knowledge and skills, the following core qualifications are required for green jobs:

- Strategic and leadership skills that enable political and economic decision-makers to set appropriate incentives and framework conditions for environmental protection, environmentally friendly transport, etc.
- Entrepreneurial and management competencies to be able to combine economic, ecological and social goals in holistic and interdisciplinary approaches.
- Adaptation and transfer competencies that enable workers to learn and apply new environmentally friendly technologies and processes relevant to the workplace.
- System and risk competencies to understand, implement and evaluate necessary change processes and measures.
- Innovation competence to respond adequately to green challenges.
- Communication and negotiation skills to manage conflicts of interest in complex contexts.
- Marketing skills to be able to launch environmentally friendly products and services.
- Consultancy skills to advise consumers on green solutions and disseminate green technologies.
- Entrepreneurial skills and abilities to seize the opportunities of low-carbon technologies.
- Environmental awareness and willingness to learn about sustainable development.
- Networking, ICT and language skills to be able to operate in global markets.

There are also proposals to include basic knowledge on climate change, sustainable development and environmental issues in all vocational education and training curricula.

# Main conclusions and recommendations

Jobs considered green are very diverse, which corresponds to the commonly accepted definitions of green jobs. They include not only specialists in the field of energy, environmental protection, or construction engineers, but above all regular employees, managers of various specialities. This group includes, among others, construction workers responsible for thermal insulation works, agricultural workers, but also managers - all whose work significantly contributes to the creation of green products or services.

Based on the responses received, the conclusion is that for employers in the green sector, it is difficult to find good employees for key positions for companies (with appropriate experience and competencies). However, with a relatively small scale of employment and employee turnover, most companies did not face this problem directly. In the opinion of the surveyed companies the most difficult is to find employees for specialists and qualified personnel positions - most often mentioned is the lack of candidates with practical experience and soft skills (like good communication skills, ability to network and adapt to the culture of the workplace) most valued by companies.


SME representatives specify what skills they think fresh graduates lack when they apply for a job in the company, the most frequently indicated skill was lack of technical/mechanical knowledge. Additionally, a lack of theoretical knowledge and IT skills were also indicated. The problem of young candidates is experience, independence and motivation, practical use of theoretical knowledge, including technical drawing. Knowledge of management and project management. Also, the lack of ability to work independently, problem-solving skills, critical thinking and the ability to improve existing ideas, the ability to adapt to the culture of the workplace are not conducive to employment right out of school (graduates).

The emerging conclusion is the need to combine both technical knowledge and business and management competencies in the green economy, as the green economy is based on technological innovations, which need to be understood in order to be effectively implemented and developed. Hence, an interdisciplinary approach to education is recommended, with the use of modular education. This study fully confirms these conclusions. The employers' statements indicate significant gaps in the labour market in specialized knowledge related to the new technologies used in the green economy - this applies mainly to the RES industry, energy-efficient construction and specialized consulting. The professions are quite commonly indicated as scarce on the market, however, there is a lack of employees with

specialist knowledge (e.g. STEM - science, technology, engineering, mathematics), or skills and professional experience needed in green industries.

Taking into account the requirements of employers for young candidates, the need to combine education and business is emphasized. Such an arrangement would make it easier for graduates to gain not only theoretical knowledge, but also practical knowledge and experience required in the recruitment process. Most companies would be willing to offer the possibility of internships/internships in their company, but they indicated that university students are most preferred. A good solution would be to guarantee their students the possibility of an internship while still in school or university and to implement classes in management and soft skills at the secondary school level.

During internships, an employer would most often want to help students develop practical experience and the ability to apply theoretical knowledge, analytical and report/project writing skills, teamwork skills, and independent decision-making skills. Foreign language skills and international schools were the least frequently indicated as part of internships. The following comes out as the main advantages of internships based on responses: the opportunity to test and/or apply theoretical knowledge in practice, to participate in the daily life of the company, to test the ability to create independent analysis, and to enter the job market without stress. The vast majority of respondents willing to offer internships indicated that there would be a possibility of employment after the internship/placement.



# Analysis of the desired skills and competencies within the Blue and/or the Green sector

## Questionnaire

*This questionnaire is created by the "SB Bridge - building bridges for green-tech future" project.*

*The project focuses on bridging students and the green and blue labour market, via: (1) reducing the mismatch between higher education and their graduates and the green and blue labour market, (2) improving motivation of young people for green and blue related studies and jobs. The project is jointly developed by partners from 5 Baltic Sea countries: Denmark, Germany, Lithuania, Sweden and Poland.*

*Your answers will help to prepare and guide students in the direction of a job in Your sector.*

*We sincerely thank You for Your participation!*

### Choose your language:

- English*
- Danish*
- Lithuanian*
- Polish*
- Swedish*
- German*

1. The first questions relate to your recruitment process and the quality of the applicants you receive when hiring.

**1.1 Please indicate your company size:**

- Microentrepreneur (less than 10 employees)
- Small entrepreneur (between 11 - 50 employees)
- Medium-sized entrepreneur (between 51 - 250 employees)
- Large-sized entrepreneur (more than 251 employees)

**1.2 How do you recruit new employees?**

- Via general online job banks.
- Through the career offices at the university/school.
- Through specialised agencies.
- Internal company database.
- Other:* \_\_\_\_\_

**1.3 Please select a sector for a specific question regarding the demands for skills and competence in your sector:**

- Renewable energy
- Waste management
- Water management
- Green building
- Clean transportation



2. These questions relate to your needs for specific competencies and skills when you are recruiting, and if you experience any shortcomings from newly graduates. Your answers will help guide and build bridges between the needs in your sector and the educational levels, so please feel free to be as specific as possible.

**2.1 Which field of study are you most likely to hire from?**

- Engineering and Technology (Natural sciences at university level)
- System design and IT
- Public administration including law
- Sales and marketing
- Logistics and economics
- Vocational training
- Other* \_\_\_\_\_

**2.2 What do you prioritize when selecting a candidate for a position in your company?**

- Theoretical knowledge
- Practical experience
- Educational level must fit completely
- Ability to put theoretical knowledge into practical solutions
- Updated on trends and future demands and ability to apply that in the workplace
- Soft skills like good communications skills, ability to network and adapt to the culture of the workplace
- Other* \_\_\_\_\_

**2.3 Which *skills* do you experience newly graduates are *lacking* when they apply for a job in your company?**

- Technical/mechanical knowhow, such as \_\_\_\_\_
- Theoretical knowledge (including rules and regulation within your sector), such as \_\_\_\_\_
- IT skills, such as \_\_\_\_\_
- Other* \_\_\_\_\_

**2.4 Which *soft skills* do you experience the newly graduates are *lacking* when applying for a job in your company?**

- Ability to work in a team
- Ability to work independently
- Ability to design and implement a solution (problem-solving)
- Critical thinking and the ability to improve on existing ideas
- Communicative skills like a foreign language or the ability to present cases both oral and in text
- Networking capacity
- Ability to adapt to the culture of the workplace
- Other:* \_\_\_\_\_

**2.5 What do you consider the biggest challenge within your sector?**

- Inability to attract relevant knowhow
- Lack of new ideas and adventurous research
- Lack of technology/technological development
- Lack of support from official /governmental site
- The abundance of rules and regulation that must be applied then testing new materials/processes
- Lack of financial support for “non-profit” solution
- Lack of public demands for greener solutions
- Other:* \_\_\_\_\_

3. We have now gained much-needed knowledge of the recruitment process in your company/sector. We would also like to know if you offer other ways into your company/sector.

**3.1 Does your company offer students an internship/traineeship? If *not* please tell us the reason.**

- Yes
- No, and the reason is \_\_\_\_\_  
(Please go to the question no. 3.5)

**3.2 Why do you offer internships?**

\_\_\_\_\_

**3.3 At what level of education do you accept interns/trainees?**

- University
- High schools (high school, technology)
- Vocational schools as part of their apprenticeship
- Other:* \_\_\_\_\_

**3.4 Which skills and competencies do you wish to develop by offering an internship?**

- Theoretical knowledge
- Practical experience and ability to apply theoretical knowledge
- Teamwork skills
- Ability to adapt to new conditions
- Increase the desire for self-study
- Independence in decision-making
- Analytical skills and ability to produce reports/projects, etc.
- Knowledge of foreign languages
- Other:* \_\_\_\_\_

**3.5 During the internship can the student:**

- Test and/or apply their theoretical knowledge in practice
- Test their ability to produce independent analyses, programs, classes, etc.
- Participate in daily company life
- Gain Stress-free entry into the labour market
- Other:* \_\_\_\_\_

**3.6 Is it possible to be employed at the end of the internship/practice?**

- Yes
- No

**3.7 We consider your knowledge very important and would like to hear your suggestions for improvements.**

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**3.8 Do you notice educational deficiencies preventing students from being employed directly after graduation?**

- No
- Yes, and they are: \_\_\_\_\_

**3.9 How would you like to influence the curriculum of the educational system to meet the needs of your company for the skilled labourer?**

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**3.10 How do you suggest we make students aware of the *broad* range of job opportunities that exist within your sector?**

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**3.11 Do you have any further comment or suggestions you wish to share with the *SB Bridge project*?**

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**3.12 If you want to learn more about *SB Bridge project* or take part in preparing students and graduates for a job within the blue /green economy, please fill in the following section:**

Company name: \_\_\_\_\_

Name of contact person: \_\_\_\_\_

Email: \_\_\_\_\_

*Thank You for participating!*

SMEs  
Needs  
For  
Competencies  
Development  
In Green Growth

Survey  
Report

2021 (78)