About real skills needs in European textile and clothing companies

Flipped classroom training Approach for Clothing and Textile Innovative VET Education

Co-funded by the Erasmus+ Programme of the European Union

EXECUTIVE SUMMARY

The FACTIVE project fits in the search for the most suitable training method to respond as effectively as possible to the real needs of employees from the European textile and clothing industry. From the outset, it was clear that identifying key skills needs would require time and energy. A number of hypotheses on skills needs were substantiated through research. More than 100 companies were consulted and reinforced the choices we made. This report contains the main points of the findings of this research.

In a first phase, statistical material was collected to support the different hypotheses and three options that emerged: The most needed skills, the most changing skills and structural changes in the composition of the workforce in the textile & clothing industry.

The FACTIVE research to test these hypotheses work was executed on two tracks. A desk research was followed by a number of consultations on the field. The desk research resulted in six national reports (one per partner country) with a statistical test of the hypotheses. With the field research we reached more than 100 companies and almost 50 VET experts. This allowed the FACTIVE project and the choices the project partners had to make to be firmly empirically substantiated.

Indeed, the research was at the basis of the choice of occupations and the competence domain that FACTIVE will focus on.

- The project partners chose to continue working on the theme of 'sustainability', the main strategic challenge for the European textile and clothing industry.

- The FACTIVE experts will develop and adapt training materials to be offered organisation-wide. That is why several occupational categories were chosen as target groups, with machine operators at the center, the most important professional category in the European textile and clothing sector.

This report is a publicly available synthesis of the more comprehensive research report and the output of the first Intellectual Output (IO1) of the FACTIVE project with the objective to identify ‘the most relevant transversal skills needed by future Textile and Clothing professionals‘.

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1. INTRODUCTION

What's FACTIVE ?

Our training systems are traditionally based on knowledge and skills that are transferred by a trainer to a student. Think of the teacher and his handbook at the front of the classroom, think of the consultant / trainer and his PowerPoint in the training room, think of the instructor, with the manual in hand, explaining to a new employee how to operate his machine.
In all these situations, the student is the recipient of knowledge and is expected to practice what he has learned to the best of his ability. Of course, the student can ask questions and is assisted when necessary, but the starting point remains the training offer as mastered and provided by the teacher or trainer.
Demand-oriented training reverses the roles. The starting point is no longer the training offer, but the situation of the student and the competence deficits as he experiences them himself. The hypothesis is that responding in a targeted manner to the questions and needs of the student would increase training effectiveness, save time and reduce costs.
For example, in order to teach the team of a pattern department to work with a new version of CAD software, in our old logic it is almost natural to collectively free half a day for a thorough explanation by an IT specialist from the software supplier, followed by some exercises and a question hour to conclude. Demand-oriented training, however, starts at the question time. Indeed, each student has a different starting position, the learning rhythm and the assimilation of new contents can vary widely. One trainee will need just a few tips to use the new software, for another trainee, starting from scratch is sometimes the best option.
The FACTIVE project, which is carried out by an international team of training experts on the one hand and experts from the textile and clothing sector on the other, is looking for the best formula to concretize and implement demand-oriented training.
A first step in the project consisted of determining one or more competence domains (occupations or occupational fields) for which adapted training courses will subsequently be developed. This report presents the findings of the research we conducted to make this choice. The research work was indeed the first step in the FACTIVE project in which further demand-oriented training materials will be developed and tested.
The method will be tested with an audience of trainees from all countries of the partnership. These experiences will form the basis of new training materials for both education and vocational training, including that of employees of textile and clothing companies.

Three options

The FACTIVE project plan is based on a set of logical choices, centered on the situation and needs of the European Textile & Clothing industries. Opting for VET instead of higher education, SME prevailing on big companies, in company trainers next to school teachers, it's all consistent with the structure of the industry and its training capacity.

Previous research shows the main challenges for the industry. Digitalisation, the internationalisation, the need to innovate and to adapt to changing market conditions and sustainability have a clear impact on skills and competences of the workforce. These have all been taken into account when writing the FACTIVE project proposal. This way, the project plan and the starting points of the FACTIVE operations, function as a pair of glasses to answer the question which competence domains the project should focus on. It is clear that we are seeking to meet the real needs of the industry.

Still, we have different options, depending on the starting points. Broadly speaking, there are three. More particularly we could identify skills that are most demanded, skills that are most changing, and skills that are becoming central to action research (such as FACTIVE) because of the structural changes in our labor market.

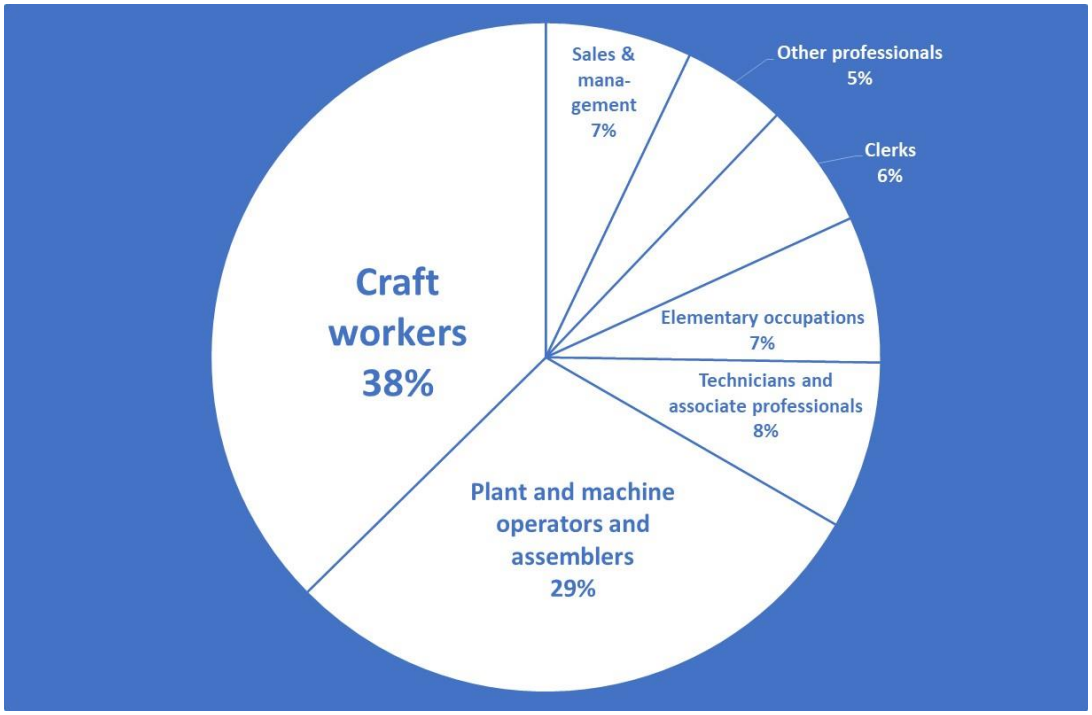
These three options are further clarified below. The aim was to make the right choice through limited but targeted research and fieldwork. The plan was to work on two tracks. First we did a desk research, then followed by a number of consultations on the field.

2. THE HYPOTHESES ON SKILLS NEEDS

Most wanted skills

The first option is to look at industry competence needs in a purely quantitative way. The relative size of professional groups, the number of vacancies as such, are an important indication of the skills needs of the industry. The answer to the question of the most needed skills is clear and all statistics point in the same direction. Traditionally and today, the sector offers the most jobs for operators in production workshops. Eurostat figures are illuminating in this regard.

Type of occupations in the EUROPEAN textile & clothing industry in 2019 (n= 1.754.786 workers) Source: Eurostat



The Eurostat categories are generic and intended to allow international and intersectoral comparison, but it is clear that workers from a production environment, albeit craft workers, albeit machine operators, are by far the most important professional group. The demand for well-trained and motivated candidates is greatest in these categories too.

National data are also available, although they are often incomplete and limited to large countries, such as Italy or Spain. In general, however, there are no major differences between the proportions of the occupational groups in the national statistics for the textile and clothing sector. This situation is widely recognized via research.

Machine operators are not stagnant occupations. We know that the practice of these occupations has changed radically over the past decades. Operator functions are particularly subject to automation and thus new technologies. Modern stitching machines can no longer be compared with those of the last century in many ways, so the competencies of stitchers have also evolved significantly in parallel. Where the stitchers were dedicated as line workers until a few decades ago, where they mainly did repetitive work on the same machine, today we see

that stitching has become distinctly versatile. A modern stitcher is supposed to master all the processing necessary for the assembly of any garment and - in extension – any textile product. Moreover, they became outspoken teamworkers, which again presupposes communication and collaborative skills, a quality irrelevant to the stitcher of the previous century. It is clear that these evolutions are of great importance for education and vocational training.

If we are to choose to follow the advice of Eurostat, we must clearly continue to work on the competence domain of the machine operators.

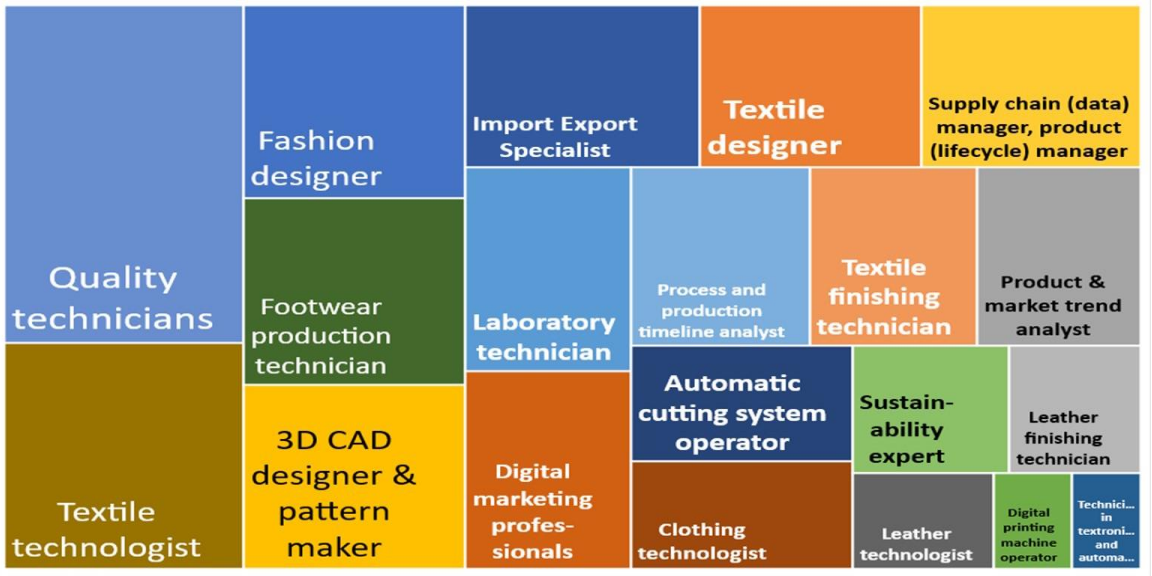
Critical competence domains

The main source for an analysis of critical skills is the ongoing blueprint project Skills for Smart Textile, Cloting, Leather & Footwear Industries 2030 (https://www.s4tclfblueprint.eu/), an European collaboration on training policy in the sectors concerned. 22 organisations from 9 European countries (BE, FR, PL, PT, ES, IT, GR, RO, BG) are participating in this ambitious project co-financed by the European Commission through the ERASMUS + program.

The aim of this project is to support the development of new knowledge and skills and to develop innovative learning methods for the employees of companies from the textile, clothing, leather and footwear sectors in Europe. The project is led by the European umbrella organisation EURATEX (Textiles & Clothing), in collaboration with its counterparts COTANCE (Leather) and CEC (Footwear).

In the first phase of the project, an analysis was made of occupations that are subject to the major social, economic and technological drivers of change. Due to the significant changes that the occupations are undergoing, we can expect skills shortages and problems, either due to a shortage of personnel or due to inadequate training, often a combination of both.

To gain insight into these occupations or professional fields, an analysis was first made of existing research material. More than 40 relevant studies were consulted and this analysis is thus the basis of the identification of 20 critical competence domains.



The size of the cells in the table corresponds to an estimated, relative importance of the occupations (number of employees) in the industry.

After the identification of these domains, the findings were tested with the industry. 225 companies from the 9 partner countries were thoroughly surveyed. After this assessment, the project partners started to work on training course content for an initial selection of competence domains. Both the findings of the industry survey and the insights of the organisations from the consortium formed the basis of the priority competence domains.

The list of these critical competence domains is presented below, along with a definition of the profession that we can connect to the competence domain. If an ESCO definition is available, we use it. If not, we refer to the definition as it was drawn up in the S4TCLF project.

List of critical occupations (Source: Skills4Smart)

(1) 3D CAD designer & pattern maker (S4TCLF)
3D animators are in charge of animating 3D models of objects, virtual environments, layouts, characters and 3D virtual animated agents. CAD patternmakers design, adjust and modify patterns for all kinds of garments & footwear using CAD systems. They check laying variants using nesting modules of the CAD system and material consumption. Once the sample model has been approved for production, these professionals make series of patterns (grading) to produce a range of the same garment & footwear model in different sizes.

(2) Textile technologist (S4TCLF)
The technologist has the skills and knowledge in the field of modern textile technologies relating to the area of mechanical technology including spinning, weaving, knitting and clothing as well as textile metrology and textile commodities. The second area is chemical technologies including artificial fibres, polymer chemistry, and finishing.

(3) Supply chain (data) manager, product (lifecycle) manager (S4TCLF)
The supply chain (data) manager is able to gather, elaborate, use and share data on quality and sustainability with different actors of the supply chain digital, such as: Product performance, product design traceability, chemical safety, animal welfare, environmental performance, life cycle assessment, social indicators , sales …. **The product (lifecycle) manager** is responsible for influencing, measuring and reporting the entire process of Product Lifecycle Management(PLM) in order to increase the performance of the company by interconnecting all the engineering systems that the company operates with, from collecting the customer requirements to be transformed into design specification for Product and Portfolio Management (PPM), to Manufacturing Process Management (MPM)and Product Data Management (PDM). Nowadays, the new computer-based technology paradigms, as well the digital networks and infrastructures become significant components of the product development and lifecycle management process in order to better respond to consumer trends, to be more efficient in design and production, to apply the principles of ethical sourcing and social responsibilities and to monitor the compliance and sustainability requirements. Therefore, due with the business complexity and requirements for agile manufacturing, this professional should demonstrate competencies to integrate, to access and to operate with tools used within a complete PLM solution-set that may include:- operating system and platforms that incorporate social technology, - software applications for product and portfolio management, product development, supply chain management- digital technologies, such as social technologies to capture the customer's voice, mobile technology to manipulate, multiply and interpret PLM-related information.

(4) Process and production timeline analyst (S4TCLF)
The analyst is responsible for gathering, elaborating, storing, using and sharing (with colleagues), digital process data in reference to compliance to customers' requirements, process performance, incl. technical sheets and production instructions, duration, energy efficiency, as well as production and machinery maintenance characterisation factors.

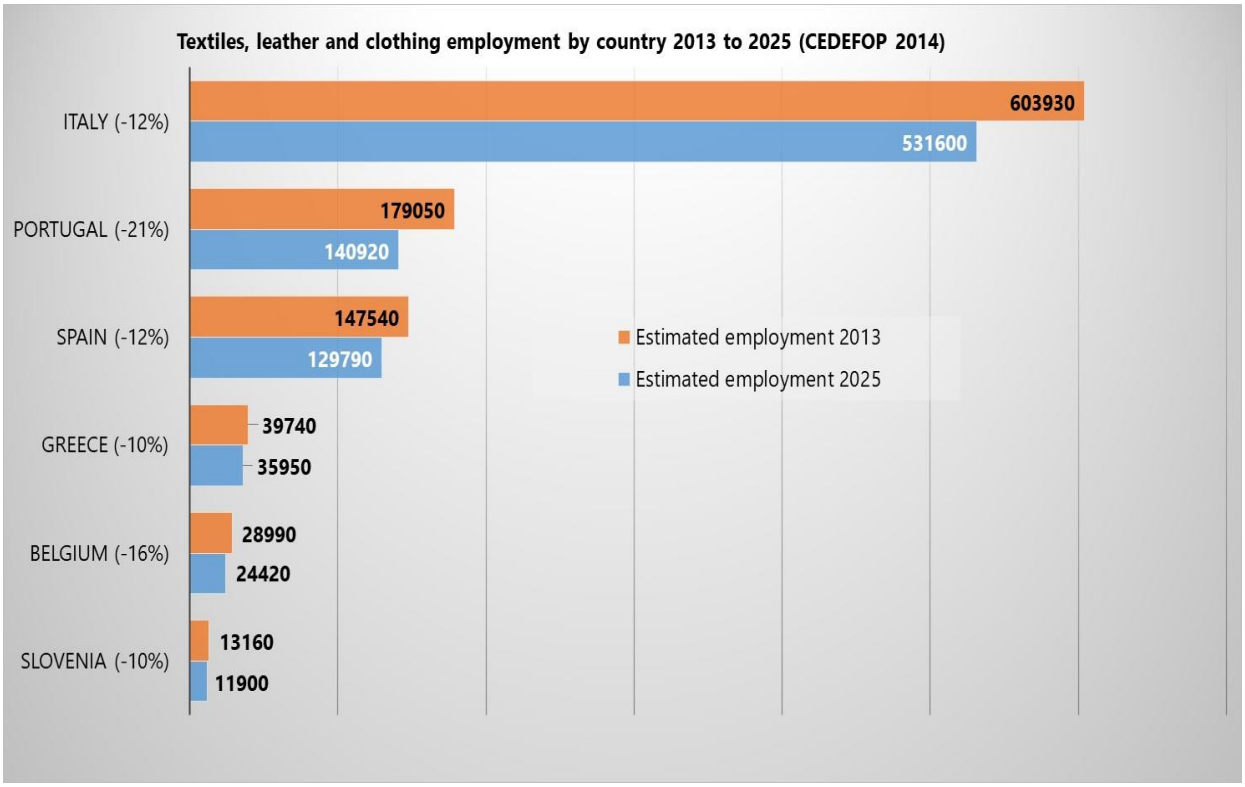
(5) Sustainability expert (including CSR and circular economy issues) (ESCO)
Environmental experts search for technological solutions to tackle environmental problems. They detect and analyse environmental issues and develop new technological production processes to counter these problematic issues. They research the effect of their technological innovations and present their findings in scientific reports. **Corporate social responsibility managers** monitor the practices of organisations and companies with regard to ethics and impact on the larger community. They advise on social responsibility and sustainability matters

depending on the company's needs. Corporate social responsibility managers promote actions that are environmentally conscious, philanthropic or related to human rights.

(6) Digital marketing professionals (e-commerce, social media, …) (S4TCLF)
This professional has knowledge of e-commerce, marketing, management and online sales methods, bank payments and other activities related to the electronic trade in textiles, clothing, leather products. He is able to manage and design e-commers activities in TCLF companies, build and design boutiques, and use the methods of designing promotional and sales campaigns. He ensures the integration of social media and other online tools/channels to offer an appealing online presence and environment for point of entry sales through the internet, to target markets and customers

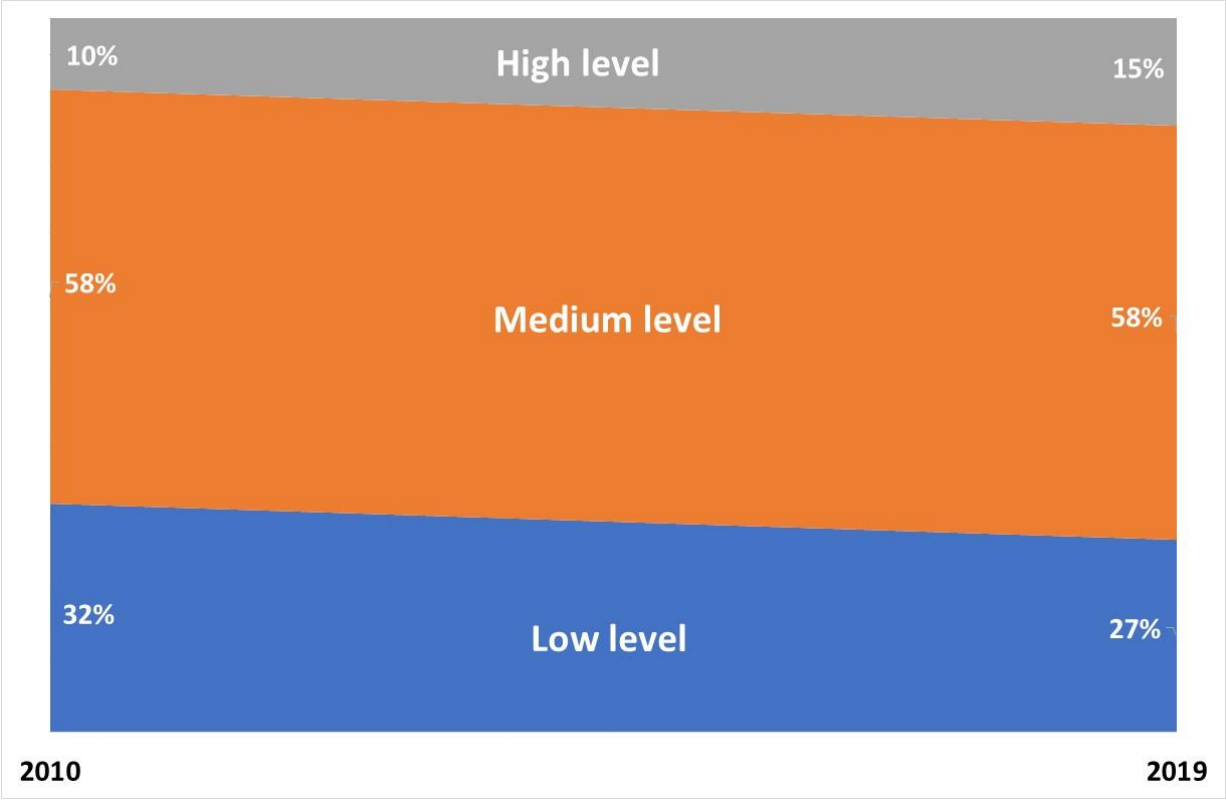
Structurally changing skills levels

A few years ago, CEDEFOP, specializing in vocational training in Europe, made a scenario for the development of employment in the textile and clothing industry in Europe. The scenario runs over a period of 12 years, from 2013 to 2025, so we're almost at the end.
Let's have a look at three key figures.
A first key figure is the continuing decline in total employment. CEDEFOP counted 2.500.000 direct jobs in textile & clothing industry in 2013. The sector will lose around 13% of jobs by 2025. Today we can only confirm that employment is currently still in a downward trend. The global picture is correct. The CEDEFOP hypothesis can be endorsed.
If we look at the situation in the different countries, we see that the CEDEFOP assumptions are not always correct. In one country the decline was less pronounced, in others the reality is just less favourable. Below we present the figures for the countries from the FACTIVE project, for verification.



The global employment figures hide a second, important evolution in the composition of the workforce. Indeed, we see an important shift in the share of employees according to the qualification level. In the lower qualification zone (think of the executive production workers who do rather simple operations) we see a clear decline of their relative importance. The middle categories (of the more specialized operators) remain relatively stable and the higher qualified are experiencing relative growth. Eurostat shows us this evolution between 2010 and 2019.

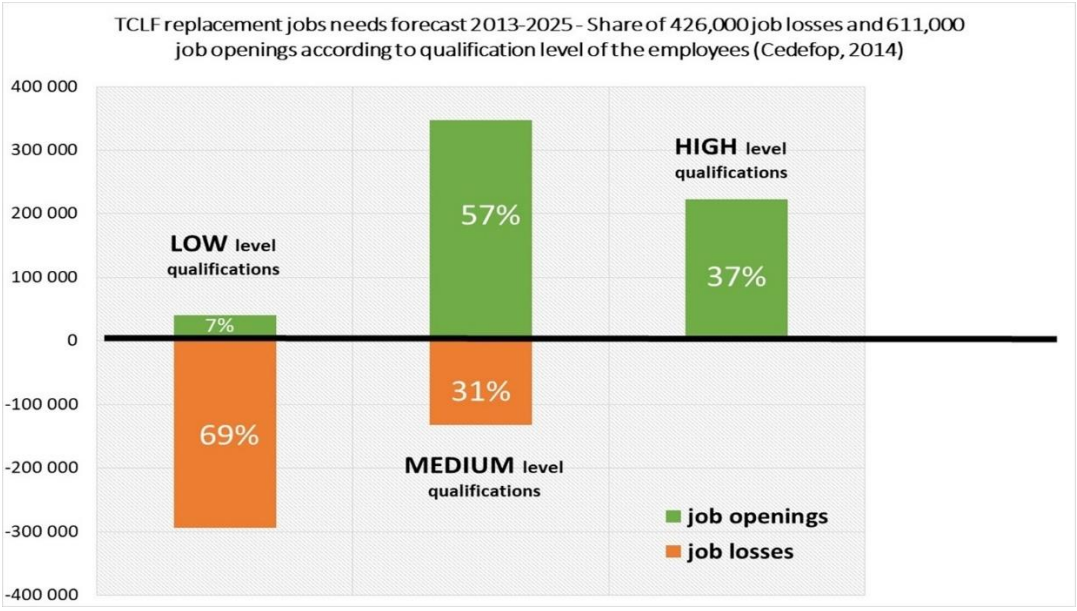
Share of employees by qualification level in the EUROPEAN textile & clothing industry. Evolution between 2010 (n= 2.080.027 workers) and 2019 (n= 1.754.786 workers) Source: Eurostat



There's a third key-figure. Back to CEDEFOP. Next to the job losses, there are replacement needs. People leaving the sector, retirements, career changes, dropouts due to illness, ... will have to be replaced. Almost 40% of all employees will have to be substituted during the same 12 year period.

Balancing the job losses against the replacement needs, CEDEFOP notices that the picture varies considerably depending on the skill level of the employees. The situation of low qualified is very precarious. The share of job losses is 70%, its share of replacement needs seems negligible.

The image is spinning. At high level, there are not even any job losses. On the contrary. CEDEFOP mentions personnel needs, even in new occupations, so occupations which did not exist at the start of the scenario.



This specific situation is at the basis of the policy choice for the upskilling of the workforce in textile & clothing industry. After all, it is feasible that a (small) part of employees from the lower qualification zone can be offered a perspective in the middle segment, given appropriate training and upskilling. Indeed upgrading within the company or industry can be a way to keep and enrich jobs.

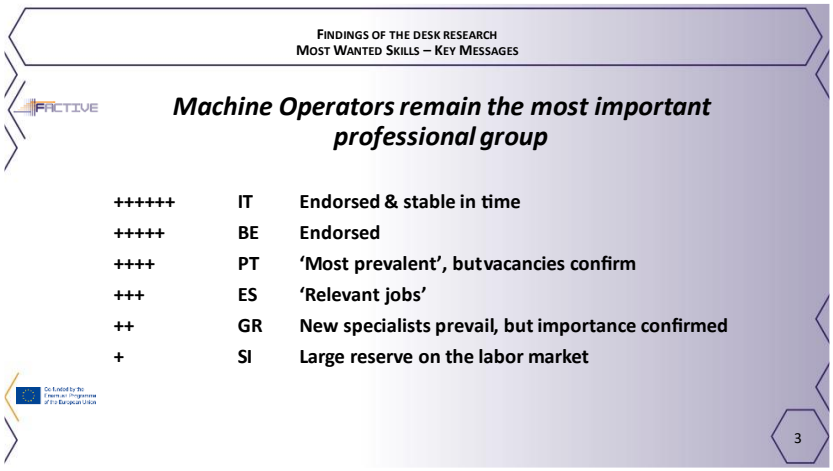
The CEDEFOP statistic is important because it indicates how Europe, and therefore also the clients of the FACTIVE project, view our industry and how they evaluate the situation. In the light of the financing of the FACTIVE project with community resources, it may therefore be expected that we connect to the upskilling logic as it is endorsed by many stakeholders.

1. DESK RESEARCH FINDINGS

The national testing of the three hypotheses provided a multitude of information and insights. It was not easy to compare national data with those at European level. The testing of the hypotheses must therefore be taken with due caution. Indeed, the analysis should not be seen as a mathematical operation, but rather as a qualitative analysis of points of recognition with the situation in each of the six countries of the partnership.

Hypothese 1. Machine Operators remain the most important professional group

Broadly speaking, the first hypothesis can be confirmed in all countries.
The confirmation is substantiated with figures in Italy and Belgium. In Italy, it is also indicated that the predominance of machine operators in employment in the textile and clothing sector remains fairly stable over time, which reinforces the hypothesis.
In Portugal, we have to fall back on job vacancy statistics to support the hypothesis. We see that sewing machine operators are and remain by far the most important professional category. Statistics for the representation of the machine operators in the global sectors work force could not be provided by the competent authorities within the timeframe of the investigation.
The same applies to Spain, although the hypothesis is certainly not abandoned there.
In Greece and Slovenia, reference is made to the sharp decline in employment in the sector in recent years, and the associated changes in the relationships between the various occupational groups. In Greece, functions other than those of the machine operators are dominant today, such as sales staff and IT, which does not mean abandoning the hypothesis, although yet another focus is put forward.
The situation in Slovenia is so dramatic that today there is a large labor market reserve of unemployed machine operators. In this sense, it would be almost cynical to endorse an hypothesis on high demand for machine operators in Slovenia.
Taking all proportions into account, we can say that the hypothesis on the most important occupation in the sector can be confirmed.



Hypothesis 2. Drivers of change cause skills shortages in specific competence domains

As far as the analysis of the most changing professions is concerned, the national assessment provides various data and insights with a clearly different status.

In Italy, an industry survey yields a shortlist of 7 occupations where mainly qualitative skills needs can be expected. It is striking that the machine operators are also at the very top in this list.

A similar analysis has been made in Portugal, with a strong focus on production personnel there too.

The term 'digital' is common in the focus of the analysis of the Belgian (Digital Marketer) and Greek (Digital specialists) project partners.

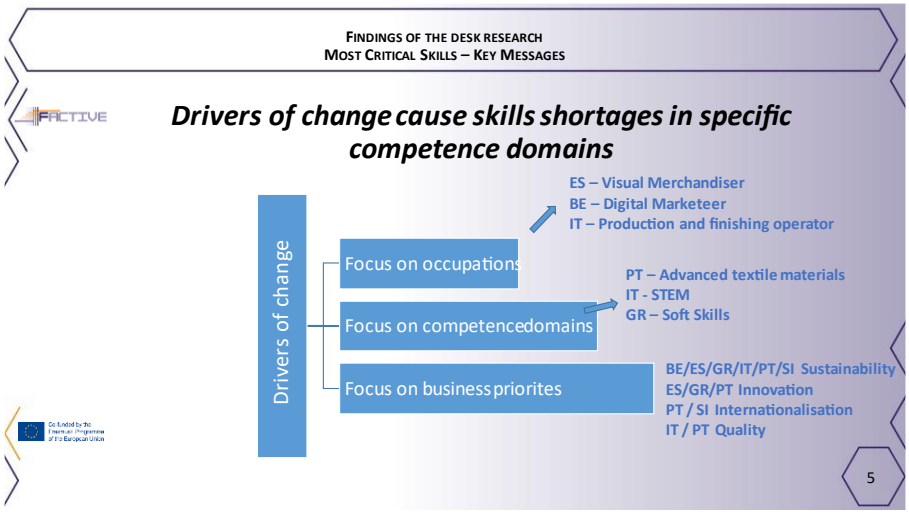
Finally, in Spain, the visual merchandiser seems to play a prominent role.

In most national reports, specific professional groups are indeed put forward. However, the lists are difficult to compare, and it is therefore difficult to consolidate the national findings, because the studies and analyzes at the basis, each have a different focus and approach. That does not make the findings any less interesting, but neither do we have an argument for setting specific, strongly changing professional groups as targets in the FACTIVE project.

That changes somewhat when we look at the more abstract analyzes, in particular the identification of important priorities in company policies, such as innovation and sustainability. This is not about professional groups, but rather about competence domains that are highly susceptible to societal and technological changes, and where skills shortages can be expected or where additional efforts will be required to fill in the business strategy options.

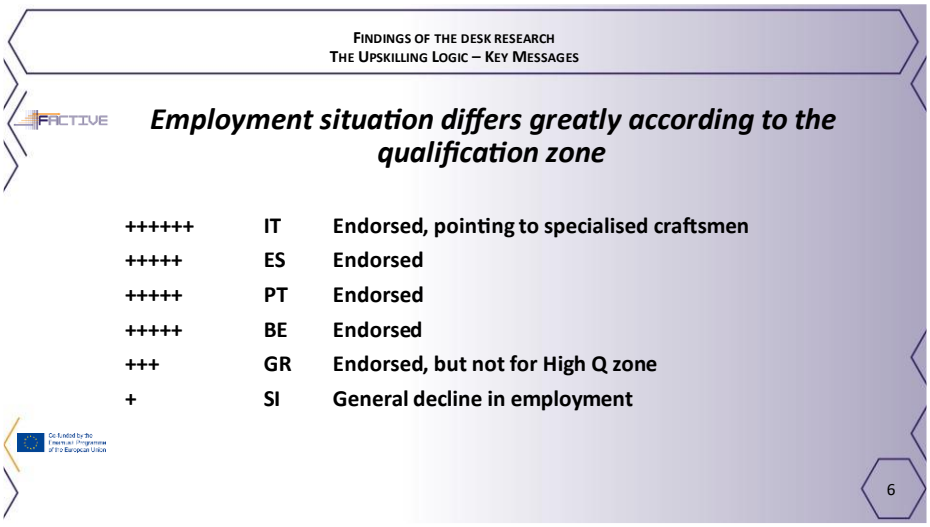
We can establish that 'sustainability' is central to the analyzes in all six national reports. This is undoubtedly the main focus of the analyzes.

Innovation, internationalisation and quality also emerge as important imperatives for business operations, but they clearly weigh less than sustainability. For the sake of clarity, the analysis is not mathematical and therefore there is no numerical ranking.



Hypothesis 3. Employment situation differs greatly according to the qualification zone

The analysis of the structural changes in the sector is the most abstract.
All national statistics do confirm the CEDEFOP scenario and thus the steady decline in employment. The differential development according to the qualification level of the employees is also determined and substantiated by figures in Spain, Portugal, Italy and Belgium. In particular, the shift of the critical mass in the sector from the lower to the middle qualification zone is recognized. Terms such as 'specialized' and 'higher diploma' are not out of the blue.
The situation in the higher qualification zone as such was not a central point of attention in the analyses, but it is nevertheless striking that research gives a clearly variant picture of the situation in Greece. Against the tide, the demand for more highly qualified in T&C industry would not be enough to bring the supply of highly skilled jobseekers into the labor market.
Finally, in Slovenia, the dramatic situation and the general decline in jobs in all qualification zones is again at the basis of a minor role in the testing of the third hypothesis.



2. SETUP OF THE FIELD RESEARCH

According to the project plan, the FACTIVE research work was executed on two tracks. First, we did a desk research, followed by a number of consultations on the field. Based on the research, we should have a good basis for the final choice of occupations and/of competence domains that FACTIVE will focus on.
The main target group of the field research were the companies, but VET experts were also questioned. In this way we got a clearer picture of the skills needs and the options for the FACTIVE project.

Field research objectives

- *Refinement of the FACTIVE research hypothesis in function of the choice of professional field / competence domain*
- *Composition of a pool of interested companies and VET partners for the next phases of the FACTIVE project*
- *Key stakeholder involvement*

The field work was conducted in full Covid-19 crisis across Europe. In that context, it was not possible to interview respondents live or to organize meetings. The project partners were therefore completely free to find the best formula to contact the respondents and conduct the interviews.

Reach of the companies survey

Companies' representatives subject of the interviews were decision-makers such as business managers, HR officers and strategic stakeholders such as employee representatives, technical project managers or training specialists.

The aim was to interview at least 10 companies per project partner, thus to reach a minimum of 90 companies in total. The total reach figure was clearly exceeded with 102 respondents. We should note that from 4 companies, 2 different respondents participated in the survey.

The aim was to involve production (controlling) companies. We preferred to choose companies with a production department, but if not present, companies that control the production of their own textile or clothing items through outsourcing or subcontracting. In practice, we see that only 4 companies have activities in trade and thus the vast majority of respondents have some form of control over the production of the textile products or of the clothing they market.
80% of the companies were SME (less than 50 employees in the parent company & subsidiaries in the country of the research, NOT with suppliers or subcontractors) with which we have also been able to keep the target group in line with the structure of our industry

Reach of the VET-survey

The intention of the VET survey was to validate the methodological starting points of the FACTIVE project and to help ensure the quality of the FACTIVE work.
The aim of the VET experts survey was to involve national, key VET partners preferably in textiles and clothing. All VET experts surveyed were indeed confirmed within this category. Two thirds of those surveyed also have expertise in textiles or clothing.
The target was to interview at least 3 VET experts per project partner, thus, to reach a minimum of 27 experts in total. This target was largely exceeded with 47 respondents.

3. FIELD RESEARCH FINDINGS - THE HEADLINES

In general, we can establish that all partner countries of the FACTIVE consortium are about equally represented in the research group. This is certainly a positive setting in light of the objective of the field work, in which we wanted to initiate the involvement of the companies in the project. It looks as if we can now rely on a relevant group of companies that showed a clear interest in the theme of the FACTIVE project, in all six partner countries.

The sample of companies was not compiled in function of any representativeness for the broader textile and clothing industry. Therefore there are clear imbalances in the research group when we compare features with the relative importance of the textile and clothing industry, for example in terms of employment in the different countries of Europe. The findings of the FACTIVE research therefore do not claim representativeness for the broader sector but must be seen as direct input for the project and the choices that we will have to make, whereby companies can still play an important role as a sounding board or to participate in testing of training materials.
The fact that we do not claim representativeness does not mean that our statistics are not representative either. For example, we have clearly focused on smaller companies and even micro companies, which is in line with a structural feature of the textile and clothing sector in Europe.

In any case, the rough results provide a good picture of the training practices in the textile and clothing sector, as we expect and know from previous research or on the basis of our collaborative experiences. In this sense, the findings provide important indications for the focal points in a demand-oriented follow-up to the FACTIVE project. We will discuss the main elements in this regard below.

It is important to keep in mind that we have questioned training practices through two entries. On the one hand, we analysed vocational training, in which we assessed experiences and preferences for specific professional groups, and on the other hand, we questioned the more strategic training courses, in which we investigated how training can support business strategic choices, the experiences and preferences.

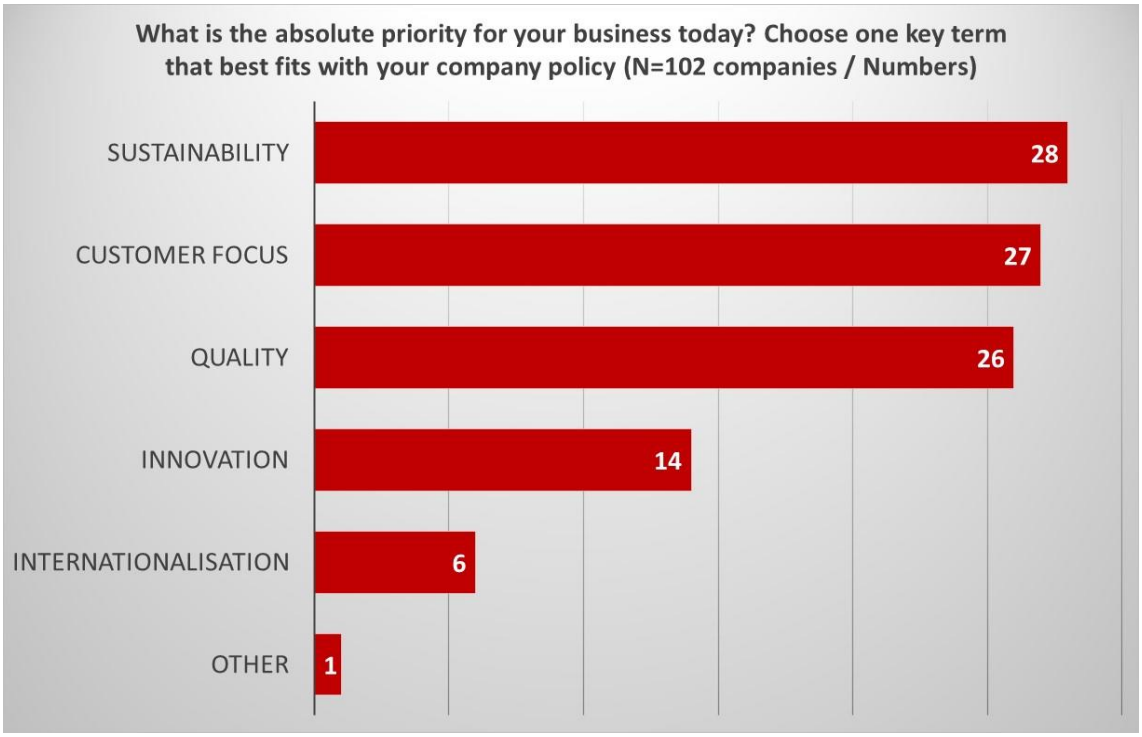
Clear shortlist with operators and sales professionals at the top

Already during the desk research, we found sufficient indications of the importance of the professional group of the (machine) operators. The field research shows us that this profession is also the most important when it comes to training efforts. We asked the respondents a specific question to which they perhaps answered intuitively, but if we look at the training time spent per year and per employee, the machine operators are at the top of the list.

As such, this finding is certainly not surprising in light of the many changes in products, changes in production organisation, and training that necessarily underpinnes these changes. On the second place, we see the marketing and sales employees who also clearly appeal to the training capacity. The customer focus of the textile and clothing industry and the ever-evolving digitisation of commercial processes are the basis of this second priority.

Support customer-oriented delivery of quality products underpinned by a sustainable business process

With regard to strategic training, we have linked the analyzes to the strategic choices that companies make. In this context, we proposed a number of important strategic themes and asked to indicate which theme best fits with the current company policy. We see that three themes appeal to an equal share of business leaders, namely sustainability, quality and customer focus. The themes of innovation and internationalisation seem to appeal significantly less to employers.



Obviously, the themes do not have the same status and we can expect that every company policy will take into account all strategic options, but the priority strategic themes are certainly not meaningless, nor surprising.

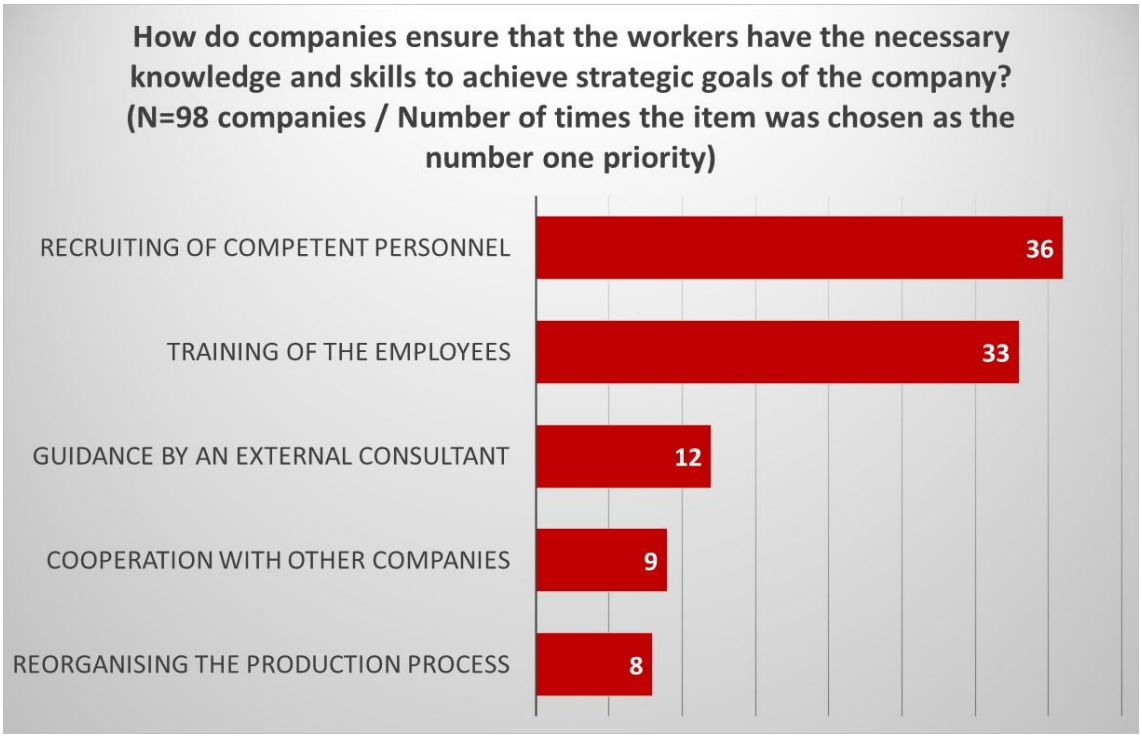
- Quality has traditionally been the argument for the existence and unique selling proposition of the European textile and clothing industry.
- The pressure to produce more sustainably has increased sharply in recent years and the pressure will certainly not diminish in the face of the most important global challenge ever.
- The fact that the customer focus scores high should not come as a surprise in the light of the struggle for survival in which companies have found themselves following the covid-19 crisis.

Innovation may be less appealing, but it will run like a thread through all possible business strategic operations.

As far as the FACTIVE project is concerned, it is clear that a substantive orientation towards sustainability, quality or customer focus will be in line with the business strategy options as recognized by the surveyed business leaders.

The combined power of self-reliance and orientation towards new talents

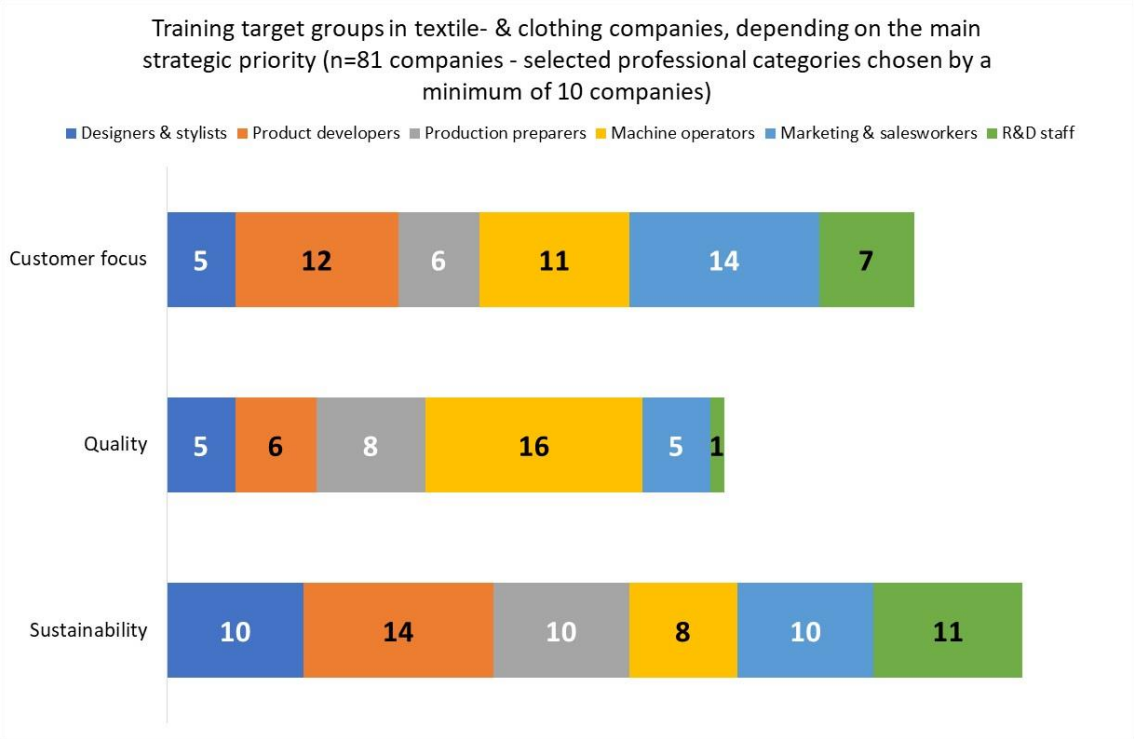
A particularly positive finding is that the development of a business strategy will in most cases be accompanied by the recruitment of competent staff, which is of course an important argument for the education world to continue to play its role and to invest more heavily in strategic areas, in addition to classical vocational training.



Of course, every corporate strategic approach stands or falls with the training of the employees who ultimately have to deliver. Training can be seen as an internal tactical operation to achieve strategic goals, while recruitment is based on finding solutions outside the company. As a top priority, training is the tactic equivalent to recruitment (each time around 40% of the employers selected the effort as the top priority), but training is part of the three priority actions for 75% of all companies in order to put a strategic course into practice.

Specific strategic choices go hand in hand with specific training settings

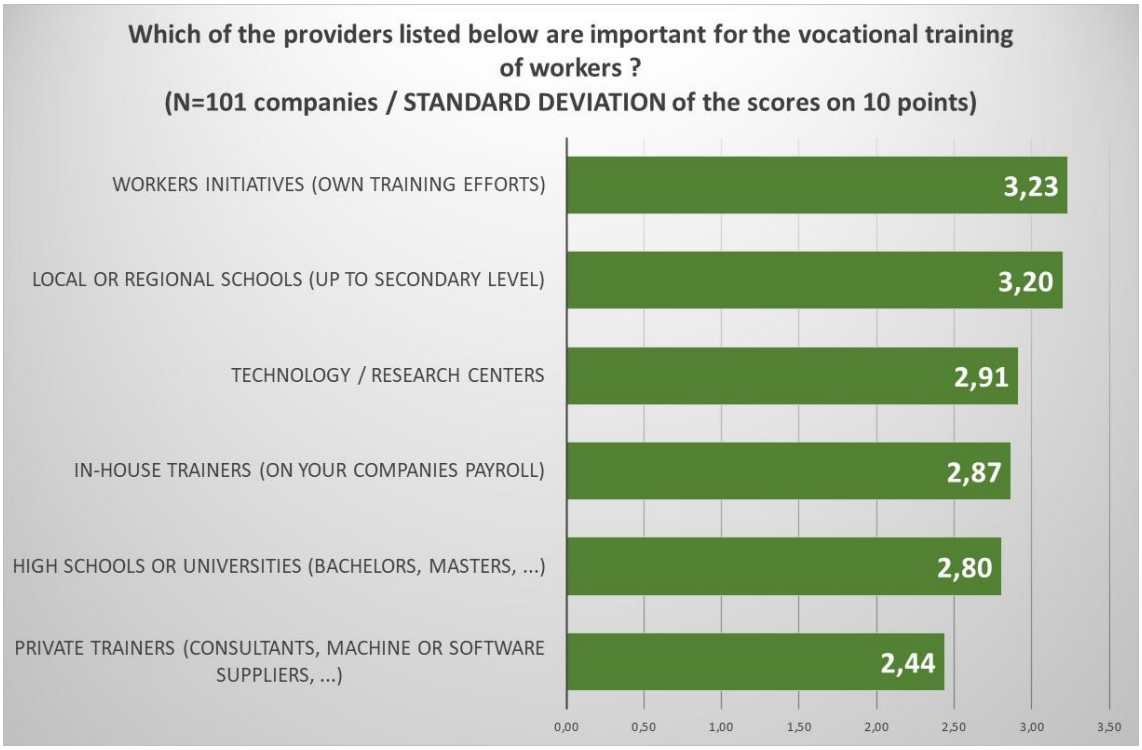
The rollout of business strategies assumes the necessary training for employees. We see that the product developers are the most important target group. Half of the companies indicate this category as a target group. The product developers are closely followed by the marketing and sales workers and - again - the production machine operators. Both professional categories are identified as training target group by a third of the employers surveyed. Yet it is not surprising that each strategic option has its own setting.



- In the companies that focus on quality, for example, we see a clear dominance of the machine operators as a target group for the training courses. It is in line with what we expect. Indeed, the machine operator's accuracy and expertise is still the most important key to quality.
- If we look at the companies that prioritize sustainability or customer focus in their strategy, we get a different picture. The target groups for the programs are broader in the sense that more professional categories are indicated. In other words, training courses tend to go organisation-wide. For customer focus, marketing and sales employees are slightly more important than the product developers. Sustainability, on the other hand, starts with competent product developers and R&D staff, but designers and production preparers will also have to sharpen their competences.

Training resources weighed but not classified

Employers were asked to evaluate various training sources according to their importance for either vocational training or strategic employee training. First of all, it is striking that the scores for the various vocational trainers differ greatly.
Apparently, training is not equally important for all companies and there is a wide variety of experiences and perceptions. The standard deviation for the scores is about three points across the board, which is very high on a scale of 10.



We could explore further relationships.

- For example, we can establish that clothing companies give a higher score to local schools (6.8) than textile companies (5.3).
- It is striking that Slovenian respondents give a relatively high score to local schools (8.0) and that Spain, for example, gives poor scores on all training resources (an average around 4 points).
- Slovenian respondents also attach relatively more importance to workers initiatives (7.9), while Italians and Portuguese give higher scores to technology centers.
- Large companies and medium size can rely on their own in-house training capacity (more than 7) and micro companies seem to give the highest score to local schools (6.7).

There will be logic explanations for all these differences. But the research sample is too limited to invoke structural explanations and we will therefore always look for an explanation in the specific situations of individual companies. As already said, our sample is not representative and

we must also take into account that some research questions might not be interpreted unambiguously.

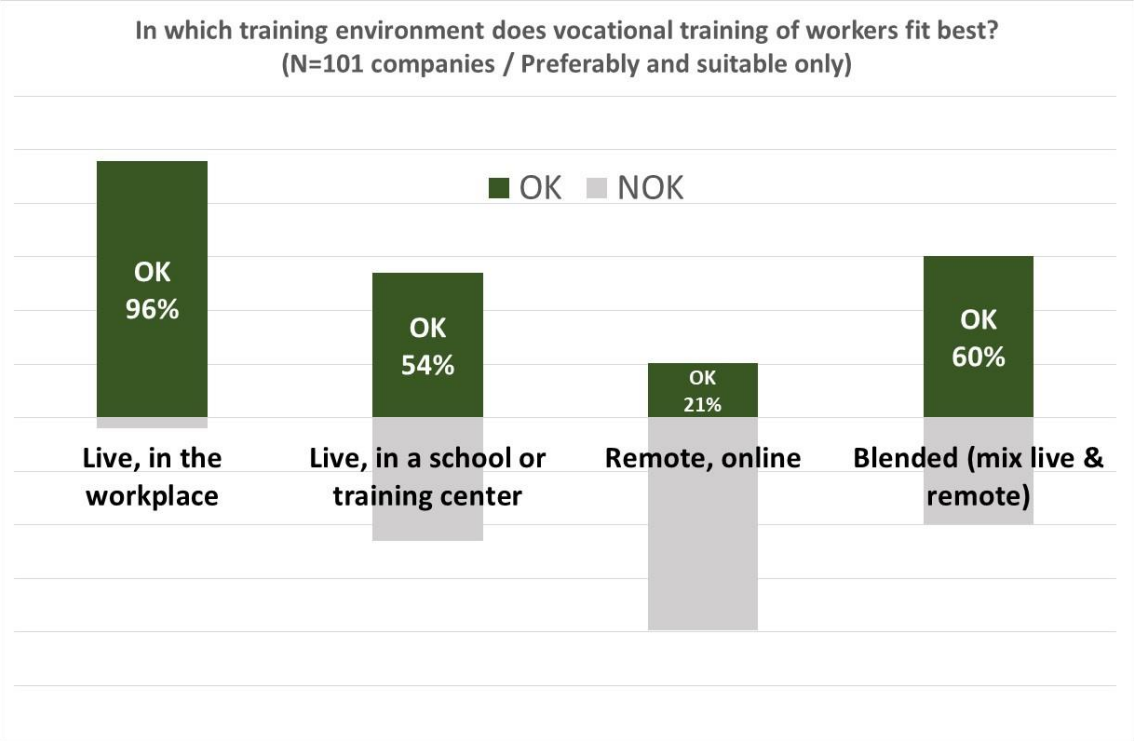
In a certain sense, our research leaves us in the dark in this regard. Again, we can refer to the great diversity of companies, product and production organisations in our sector and therefore also the diverse sources that companies use to provide and maintain the necessary competences.

Conditioned by self-reliance and orientation towards new talents

It is clear that training in the textile & clothing industry is primarily an internal affair. Companies have learned to take matters into their own hands. Rather than believing that the solution comes from the outside, companies themselves are responsible for the further training or retraining of their staff and newcomers. Previous research shows that the self-reliance of companies is gaining importance, which is reflected in an increasingly efficient and effective in-company training capacity.
Does this mean that the role of schools and external training centers is played out?
Not at all, and on the contrary!
The much-needed rejuvenation of the sector will never be possible without efficient guidance from the educational world. Moreover, supporting the in-company training capacity requires a strategic transition in the provision of services of schools and training centers. The FACTIVE project can play an important role in this area.
Indeed, we need innovative formulas to support in-company training, adapted to the demands and possibilities of companies. For example, dual learning, which is currently on the rise in Belgium, and to a large extent inspired by the German model, is a strategic change of course that may well hit the spot.

Blending in the workplace

If we look at the training formulas, we see that live training in the workplace is the absolute preference of companies.



Online learning is by no means self-evident, especially when it comes to vocational training. Blended training formulas can count on some sympathy. It is striking that strategic training can be done online for slightly more companies.

For only 1 company in 5, online training is suitable for vocational training. This share doubles for strategic training. Blended training is acceptable as a formula for vocational and strategic training for 60% and 75% of companies, respectively.

Focus on form with strong content

With the FACTIVE project, we focus on innovative, demand-oriented formulas that should benefit the efficiency and effectiveness of training. If we look at the possible improvements to training settings as perceived by the employers, we see that the alignment of the training content with company specific needs is at the very top of the wish list.

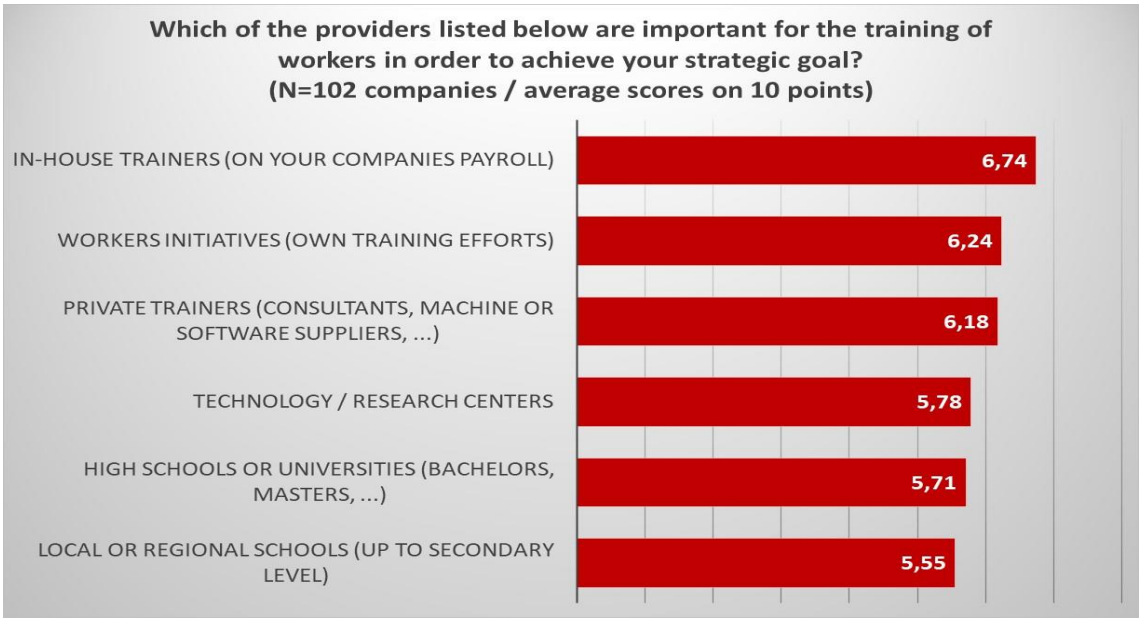
This option is most often chosen as the top priority or one of the top three priorities. This finding is again not surprising in light of the great diversity of products and production methods in our sector. The textile and clothing sector is a sector of niche players and it is extremely difficult for the training world to offer tailor-made training. But it seems to be precisely the major problem that the employers would like to eliminate. This issue is clearly about training content, while the FACTIVE project rather focuses on training formulas. Nevertheless, we can expect that a certain amount of attention to the substantive aspects can also strengthen the formula.

Real efficiency improvements (shorter duration, less training costs) are at the very back of employers' wish lists, which can be read as an endorsement of the importance of training, but of course this is not in line with the principles of the FACTIVE project. We should rather look for an added value in the area of possible optimisation of pedagogical aspects, such as the pedagogical competences of trainers or the learning capacity of the trainees. Both optimisations are identified among the three priority improvements to training courses, by about 40% of the employers.

Training is a shared responsibility

Employers were asked to evaluate various training sources according to their importance for either the vocational training or the strategic training of employees. First of all, it is striking that the average values of the importance of vocational training differ greatly.

We noted that the assessment of various training providers is very diffuse and that there are often big differences between the companies perceptions. Yet there is an undeniable and somewhat surprising observation that we can make in the analysis of the importance of the training resources. In addition to the traditional training providers (local schools, universities, private providers, ...), we also presented the training effort of employees on their own initiative. For vocational training this source seems less important and in-house training clearly dominates. Employers thus seem to assume responsibility for the vocational training of their workforce. However, the importance of employee-initiated training rises remarkably to the second position in the ranking (in-house training is still number 1) when looking at strategic training.



Apparently, the expectations of some employers in this area are different and it is expected that the employee initiative will have to contribute stronger to the competence development that is necessary to achieve strategic goals. Perhaps also the profile of the target group of the strategic training programs - that we estimate at a rather high qualification level - and to which we can attach greater responsibility and autonomy, plays a role.
We must certainly take this shift into account if we want to connect FACTIVE with strategic training premises.

Picking up on the post-crisis recovery

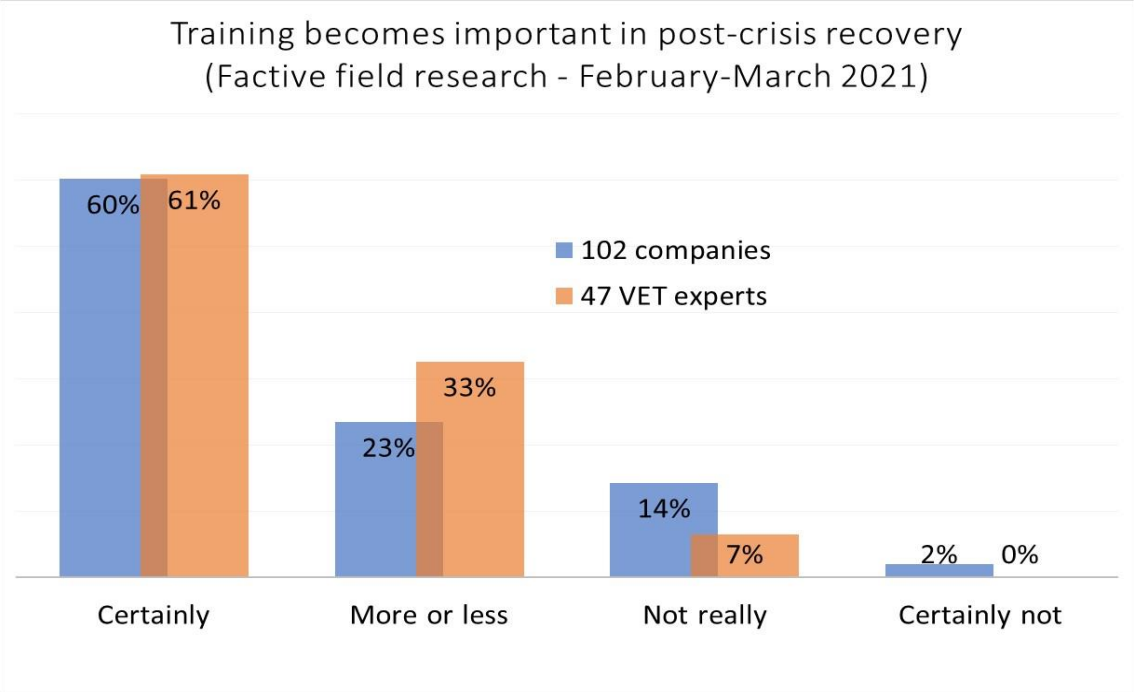
The Covid-19 crisis has turned our industry upside down. For a detailed analysis of the impact of the pandemic on the sector, we refer to an appendix to this report. During the study, we examined some of the main aspects of the significance of the crisis, in particular for training activities and the strategic demarches of the companies. The FACTIVE project will also be rolled out in the crisis, hopefully in the aftermath, but it should be clear that the possibilities and conditions of the FACTIVE project will also be largely determined by Covid-19. For example, the orientation towards remote training, whether blended or not, and the testing of flipped classroom formulas in remote settings, is a logical condition for the next steps in the project. It is particularly interesting to compare the expectations of the business leaders with those of the external VET that we surveyed in the fieldwork.
The Covid-19 crisis has an unprecedented impact on education & training in our schools or training centers and in companies. Broadly speaking, we see that employers consider the impact to be slightly less strong than the VET experts. Both groups agree that the Covid crisis has made training a higher priority, but against 60% of companies we counted 80% of VET experts who share this belief. Obviously, both have their own point of view and possibly think of a different audience, but employers still seem to have more reservations. Even when looking at the employee motivation that training could promote in times of crisis, 70% of companies support this view, compared to an overwhelming 95% of VET experts.

We see the same ratio when we gauge the opinion about the breakthrough of online training due to Covid-19. For almost all VET experts, the trend is irreversible, but one third of the employers do not believe in it.

In any case, this finding is an important point of attention in the FACTIVE project, where VET experts and sector organisations from the European textile and clothing industry work on innovative training formulas with a focus on remote training settings.

In terms of corporate strategic operations, we see that the Covid crisis seems to hamper both the recruitment of competent personnel and the training of employees (the two main efforts) in the perception of about half of the companies surveyed. Second-order efforts, such as hiring external consultants or collaborating with other companies, would not be hindered by Covid, business leaders believe. Collaboration with other companies would even be easier for 1 company in 5, which is understandable in the light of the opportunities of collaboration and solidarity to get out of the crisis.

Companies and training centers may not always have the same opinion, but the most important finding, however, is the broad support of both research groups for the belief that training is an important lever in post-crisis recovery, as can be seen from the graph below.



Finally, it is a minority, yet 1 manager in 5 thinks that the covid crisis will facilitate training of workers, which we can possibly link to the reduced business activity during the crisis and thus the space that becomes available for training. Obviously, this is also clearly an opportunity for the FACTIVE project.

4. CONCLUSIONS FOR THE NEXT STEP IN THE FACTIVE PROJECT

The research carried out, both the desk research and the field research, allow us to make a choice of competence domains and target groups for the products that we will develop in the FACTIVE project. We have to be pragmatic in this regard. The product that we will develop must be feasible in the light of the competencies that we have available in the FACTIVE partnership. However, we have no indication that the research results would cause us any difficulties in this area.

The research results show fairly unambiguously to the key competence domains that are of strategic importance to the industry. The project partners quickly and unanimously decided on "sustainability" as the theme for the FACTIVE product.

- Sustainability emerges as one of the three themes that best match the future strategy of the companies surveyed. As already indicated, sustainability is not opposed to other strategic themes (such as quality and customer focus in particular), but the pursuit of a more sustainable production process is supported sector-wide today.
- The conviction that a more sustainable business model is the best choice for all stakeholders comes primarily from the companies themselves and has long been confirmed in research and practical experiences, even though this change in thinking and acting is not without obstacles. The pressure from almost all stakeholders of the textile and clothing industry, translated into national and European policy on our industry, provides a catalyst for the change process. The FACTIVE choice to continue working on sustainability is thus also in line with the European policy imperatives, the Green Deal in particular.
- Several project partners have already worked on sustainability in the past, both the partners from the industry and those from the training world. The pragmatic premise is thus fulfilled.
- Finally, sustainability is a distinctly transversal theme, as we have put them forward in the project plan, enabling us to optimize the valorisation of the results of our project work on the widest possible scale.

If we look at the main target group that could have an interest in a FACTIVE product on sustainability, we could choose the occupational group of product developers and also R&D staff of companies. Indeed, these professional groups are designated as the most important target group for strategic training by companies that want to work on sustainability.

Nevertheless, we want to go broader in defining the target groups. The choice is essentially motivated by a consideration related to a gap in sustainability work.

In our research group, we identified dozens of companies (one third of the research group) that identify sustainability as their most important business strategic focus point. The impression is that these are companies that have made a motivated and well-founded choice for sustainability

and have been working on it for some time now. These companies indicate notably more professional groups as a target group for strategic business training than companies that, for example, indicate "quality" as a strategic asset. In other words, we see that the companies that opt for sustainability also want to work on competence strengthening relatively more organisation-wide. However, this is by no means always the case when we consider our experiences with sustainability demarches in some companies. In certain cases, for example, working on sustainability is limited to the assignment of designers or product developers, without more. In other cases, business training is hardly a lever and working on sustainability is more likely to be guided by external consultants and communication agencies in order to create an image of sustainability.

With the FACTIVE product, we seek to connect with the logic that sustainability requires an organisation-wide approach and that therefore all professional categories can play a role in building a sustainable production process and must therefore receive the necessary training. In addition to the target group of product developers, we therefore also focus on machine operators and sales employees. These two professional groups are the two main target groups of in-company vocational training, which seems to us to be an opportunity to interweave aspects of sustainability with the regular training courses that are provided for operators and sales staff.

But above all, we want to consistently extend the line of competence strengthening from the product developers over the operators to the sales employees, so with the same content and of course with the demand-oriented training methodology that we want to develop in the FACTIVE project. It is clear that in this way we focus on the three essential links in the business process of textile and clothing products: design - production - sales.

Regarding the FACTIVE product, the project partners share the belief that "*The FACTIVE MOOC will be effective if we will be able to provide short (2-3 min) videos which trainers and trainees can use on their mobile phones directly as part of a workplace learning"* a starting point, inspired by a consultation of more than 100 companies, that will be a reliable guideline in the following phases of the project.

ANNEX. DESK RESEARCH SOURCES

Hypotheses formation

- Skills for Smart Textiles, Clothing, Leather and Footwear (2019) Future needed skills and trends for the TCLF sectors, Brussels (downloadable at https://www.s4tclfblueprint.eu/project/results/)
- European Skills Council for Textiles, Clothing, Leather & Footwear (2015) Annual Report 2014, Brussels (downloadable at http://europeanskillscouncil.t-c-l.eu/en/reports.aspx)
- EU Skills Panorama (2014) Textiles, leather and clothing Analytical Highlight, prepared by ICF GHK and Cedefop for the European Commission
- https://ec.europa.eu/eurostat/
- http://digitaltclf.eu/projects/

Hypotheses testing in Belgium

- *European Skills Council for Textiles, Clothing, Leather & Footwear (2015) Annual Report 2014, Brussels - downloadable at http://europeanskillscouncil.t-c-l.eu/en/reports.aspx*
- *https://arvastat.vdab.be/arvastat_basisstatistieken_vacatures.html*
- *Skills for Smart Textiles, Clothing, Leather and Footwear (2019) Future needed skills and trends for the TCLF sectors, Brussels (downloadable at https://www.s4tclfblueprint.eu/project/results/)*
- *https://www.ecommercefoundation.org/*
- *https://becommerce.odoo.com/mm-q2/s1-2020*
- *https://www.topatelier.be*
- *https://www.duurzameontwikkeling.be/nl*
- *https://www.rsz.fgov.be/nl/statistieken/onlinestatistieken*
- *Binotto Chantal ea. (2020),Verslag over de economische conjunctuur in de textiel- en kledingindustrie - december 2019, FOD Economie, K.M.O., Middenstand en Energie*
- *https://ec.europa.eu/eurostat*

Hypotheses testing in Greece

- Hellenic Fashion Industry Association (SEPEE)
- https://www.statista.com/statistics/426056/production-value-in-the-manufacturing-of-textiles-sector-in-greece/
- https://www.certh.gr/dat/141D2148/file.pdf
- https://ec.europa.eu/growth/sectors/fashion/skills_en
- Ministry of Development and Investments report: https://www.ggb.gr/sites/default/files/basic-page-files/3.%20%CE%95%CE%9A%CE%98%CE%95%CE%A3%CE%97%20%CE%9A%CE%9B%

CE%A9%CE%A3%CE%A4%CE%9F%CE%AB%CE%A6%CE%91%CE%9D%CE%A4%CE%9F%CE%A5%CE%A1%CE%93%CE%99%CE%91.pdf

- https://www.cedefop.europa.eu/en/publications-and-resources/country-reports/greece-2018-skills-forecast

Hypotheses testing in **Italy**

- Ministero del Lavoro e delle Politiche Sociali (2010). *Analisi e definizione delle competenze critiche e le professionalità esistenti/emergenti nell'ambito del Tessile e del Calzaturiero.*
- https://informatex.it/wp-content/uploads/2017/07/3a-Analisi-e-definizione-competenze-e-professionalita.pdf
- Tartaglione, C. (2014). *I principali numeri sull'occupazione del tessileabbigliamento italiano prima e durante la crisi*. Fondimpresa.
- https://informatex.it/wp-content/uploads/2017/06/Occupazione-nel-Tessile-Abbigliameto-in-Italia.pdf
- Sistema Informativo Excelsior (2019). *Previsioni dei fabbisogni occupazionali e professionali in Italia a medio termine*. Unioncamere.
- https://excelsior.unioncamere.net/images/pubblicazioni2019/report-previsivo-ottobre-2019.pdf
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- https://www.fondirigenti.it/documents/35495/a3c396b1-9ce1-9845-dcee-55a621baf531
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- https://www.istat.it/storage/settori-produttivi/2019/13.pdf
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- https://informatex.it/wp-content/uploads/2017/06/Occupazione-nel-Tessile-Abbigliameto-in-Italia.pdf

Hypotheses testing in **Portugal**

- IEFP - https://www.iefp.pt/documents/10181/9766505/Informa%C3%A7%C3%A3o+mensal+janeiro+2020.pdf/1705cb43-a4dd-4c2b-b37b-bceaa2beae33

- IEFP https://iefponline.iefp.pt/IEFP/pesquisas/search.do
- ANQEP (National Agency for Qualification and Vocational Education) - https://www.anqep.gov.pt/np4/home.html
- [SANQ (Qualification Needs Anticipation System) - https://www.anqep.gov.pt/np4/302.html
- Doc_PC01_12_R0 - 2020_Registo_Empresas _FPCT_ Inserção Profissional_REGISTO_NACIONAL
- ATP (2017). Roadmap para a especialização inteligente e competitividade global da ITV Portuguesa. Retrieved from https://atp.pt/wp-content/uploads/2019/06/RoadMap.pdf
- Estratégia Regional de Especialização Inteligente (2016). Retrieved from https://norte2020.pt/sites/default/files/public/uploads/documentos/norte2020_ris3.pdf

Hypotheses testing in **Slovenia**

- Skills supply and demand up to 2025, Slovenia, Cedefop report - https://www.cedefop.europa.eu/printpdf/publications-and-resources/country-reports/slovenia-skills-forecasts-2025
- Development of the Slovenian textile and clothing industry, Bruno Završnik and Vojko Potočan, Faculty of Economics and Business, University of Maribor, Slovenia

Hypotheses testing in **Spain**

- https://www.mincotur.gob.es/Publicaciones/Publicacionesperiodicas/EconomiaIndustrial/RevistaEconomiaIndustrial/355/1PAG%20263-272.pdf http://repositori.uji.es/xmlui/handle/10234/183982
- https://treball.barcelonactiva.cat/porta22/images/es/Barcelona_treball_Informe_sectorial_industria_textil_2013_ES_tcm24-4027.pdf
- Teclo e-report. A STRATEGY FOR FUTURE KNOWLEDGE INTENSIVE AND INNOVATIVE TEXTILE AND CLOTHING SMES. 2015.
- https://www.educaweb.com/profesion/operario-textil-831/
- https://congresosdeformacion.com/2018/10/29/textil-importante-sector-formacion/
- https://www.todofp.es/que-como-y-donde-estudiar/que-estudiar/familia/loe/textil-confeccion-piel.html
- https://blogs.imf-formacion.com/blog/mba/perfiles-demandados-sector-moda/
- http://www.educacionyfp.gob.es/va/prensa/actualidad/2020/08/20200804-textilfp.html
- https://blog.fundae.es/2020/09/22/ocupaciones-emergentes-textil-confeccion-piel-calzado/

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