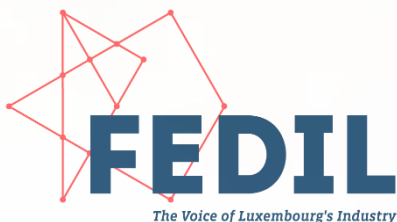


Industry

Sectoral study

Trends in terms of occupations
and skills

In collaboration with:



November 2021

Introduction (1/2)

In an increasingly complex labour market, driven by technological, environmental and societal transitions, the skills gap is a major concern for governments, businesses and society as a whole.

In-depth analyses of the trends in occupations and skills of the Luxembourgish labour market are crucial in order to better understand, anticipate and address this skills gap. In this context, the Ministry of Labour, Employment and the Social and Solidarity Economy (MTEESS) and the Public Employment Service (ADEM) have initiated sectoral studies, which are part of ADEM's Future Skills Initiative and the partnership for employment between ADEM and the Luxembourg Employers' Association (UEL).

Work conducted in the ADEM/UEL partnership working groups has confirmed the lack of data (comprehensive and of good quality) on skills in demand and available in Luxembourg (and in the Greater Region), both in public administrations and in the private sector. ADEM currently has the richest data on this subject, stemming from the job vacancies that are declared by companies and from matching indicators between vacancies and jobseekers. It should be noted that this data is limited to the job vacancies actually declared to ADEM, which does not cover all the vacancies in Luxembourg, despite the legal obligation to declare every vacancy. Our sectoral studies are therefore not pretending to be representative of the Luxembourgish labour market as a whole; they are a first attempt at a granular and extensive analysis to create more transparency on this particular market.

The sectoral studies cover seven sectors: 1) finance, 2) industry, 3) construction, 4) hospitality/horesca, 5) commerce, 6) transport and logistics, and 7) crafts. In order to validate the conclusions from the analyses (especially given that the data is not comprehensive of the whole market), ADEM collaborated with the corresponding employers' organisations that represent each sector. For this sectoral study of the Industry sector, ADEM thanks the FEDIL (The Voice of Luxembourg's Industry) for their collaboration and fruitful exchanges.

Introduction (2/2)

Each sectoral study includes 1) an introductory chapter with the definition of the sector's scope and an overview of key figures, 2) a summary of qualitative trends in the sector (technological, societal and other), 3) an analysis of trends in occupations (key occupations, growing and declining occupations, shortages) with a list of occupations to be prioritised and audiences to be targeted for reskilling/upskilling, 4) an analysis of the in-demand skills in the sector's job offers, and 5) a glossary.

The target readers of these studies are both employers, who will find a benchmark of the situation and trends in their sector, and employees/jobseekers who will be able to better adapt to these trends.

The findings of our studies should help us to:

- introduce new instruments to address the skills gap;
- define and implement targeted training/upskilling/reskilling actions;
- guide career choices;
- develop the national skills strategy (which is currently handled by the *Skillsdësch* with the support of the OECD).

These sectoral studies are only a starting point. They will of course have to be complemented by and confronted with other analyses carried out through new ADEM collaborations or by different actors in the ecosystem.



Isabelle Schlessler
Director of ADEM

FEDIL's perspective

"One of FEDIL's interests is to ensure that our companies have the qualified workforce needed to develop their activities. It is therefore necessary to ensure that vocational training, both initial and continuous, enables employees, young people and jobseekers to acquire the qualifications and skills required by companies, and to meet future needs in the light of technological progress. We find ourselves in a world of constant change, particularly in terms of the skills and occupations most in-demand by companies. Among other things, this study provides information on trends in industry occupations and indicates which occupations are experiencing shortages or surpluses of candidates. This analysis should improve the guidance of young people and contribute to a better transparency of the job market, which has become increasingly complex over the years."



Michèle Detaille
President of the FEDIL

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1. Definition of the sector and key figures



Definition of the sector

For this sectoral study, the sector is defined according to the NACE code, the European Statistical Classification of Economic Activities. In agreement with the FEDIL, the Industry sector is defined by the NACE categories C, D and E. They include both manufacturing (manufacture of textiles, rubber and plastic products, motor vehicles, trailers and semi-trailers...), energy (production and supply of electricity, gas, steam, air conditioning...) and water and waste management activities.¹

Section	Division	Libellé	Nombre d'entreprises
C		Industrie manufacturière	795
	10	Industries alimentaires	114
	11	Fabrication de boissons	37
	12	Fabrication de produits à base de tabac	1
	13	Fabrication de textiles	19
	14	Industrie de l'habillement	14
	16	Travail du bois et fabrication d'articles en bois et en liège, à l'exception des meubles ; fabrication d'articles en vannerie et sparterie	17
	17	Industrie du papier et du carton	3
	18	Imprimerie et reproduction d'enregistrements	65
	20	Industrie chimique	14
	21	Industrie pharmaceutique	1
	22	Fabrication de produits en caoutchouc et en plastique	23
	23	Fabrication d'autres produits minéraux non métalliques	40
	24	Métallurgie	7
	25	Fabrication de produits métalliques, à l'exception des machines et des équipements	201
	26	Fabrication de produits informatiques, électroniques et optiques	11
	27	Fabrication d'équipements électriques	11
	28	Fabrication de machines et équipements n.c.a.	28
	29	Industrie automobile	8
	30	Fabrication d'autres matériels de transport	3
	31	Fabrication de meubles	26
	32	Autres industries manufacturières	93
	33	Réparation et installation de machines et d'équipements	59
D		Production et distribution d'électricité, de gaz, de vapeur et d'air conditionné	119
	35	Production et distribution d'électricité, de gaz, de vapeur et d'air conditionné	119
E		Production et distribution d'eau; assainissement, gestion des déchets et dépollution	72
	36	Captage, traitement et distribution d'eau	4
	37	Collecte et traitement des eaux usées	14
	38	Collecte, traitement et élimination des déchets; récupération	48
	39	Dépollution et autres services de gestion des déchets	6

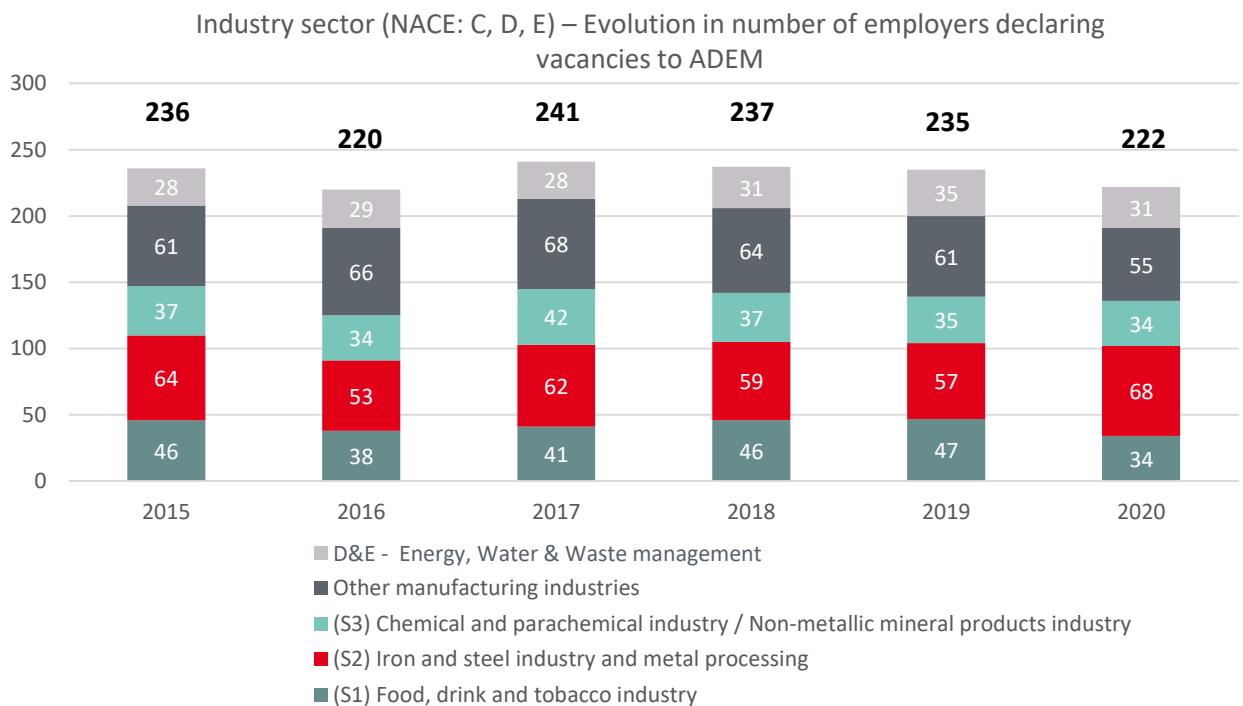
Source : <https://statistiques.public.lu/catalogue-publications/repertoire/2020/repertoire-entreprises-luxembourgeoises.pdf>

¹ In agreement with FEDIL, in addition to the employers belonging to the 3 selected NACE categories (C,D,E), 8 separate employers (categorised under other NACE categories) were added to the "Industry" scope of this present study, with the aim of better covering the needs and trends.

ADEM's key figures of the sector (1/2)

Our analysis in this study is based on job vacancies reported to ADEM by employers in the Industry sector (NACE categories C, D, E). In an objective of consistency with the FEDIL publication les qualifications de demain dans l'industrie, the NACE category C (Manufacturing) has been subdivided into (S1) Food, beverages and tobacco: NACE 10, 11, 12, (S2) Iron and steel: NACE 24, 25, 26, 28, (S3) Chemical and parachechemical industry / Non-metallic mineral products industry: NACE 20, 22, 23, 27, and Other manufacturing industries. Sectors D and E have been grouped together due to their small volumes.

The following graph illustrates the number of employers in the sector who have reported job vacancies to ADEM, and the evolution of this number over the 2015 - 2020 period. Of the 986 companies active in the sector in 2020 (see previous page), 222 have declared vacancies to ADEM.



The total number of employers reporting vacancies has remained fairly stable since 2015, with a drop in 2020 in the context of the Covid-19 pandemic.

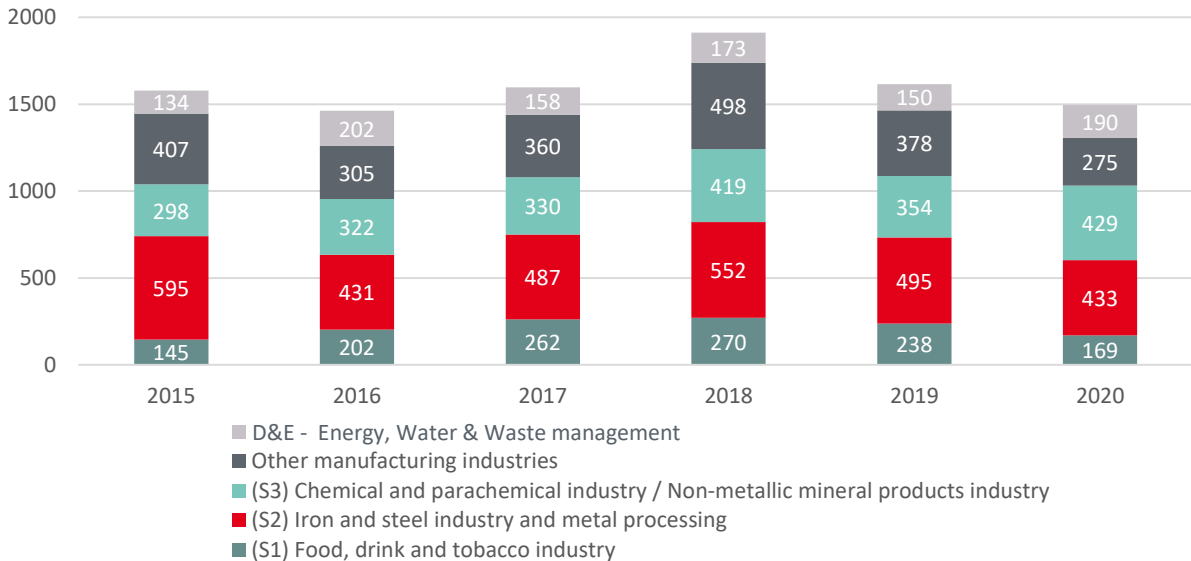
Source: job vacancies declared to ADEM, expertise of ADEM employer advisors and the FEDIL

ADEM's key figures of the sector (2/2)

Let us now look at the evolution of the number of job positions declared by these employers, excluding positions related to employment measures. Jobs declared via interim agencies are also excluded as they fall under another sector.

Here we note that there was a significant increase between 2017 and 2018 in the number of jobs reported by the manufacturing industry. After 2018, the number of jobs declined again. The pandemic did not seem to have had a significant impact on the number of jobs reported in 2020 (this is partly because potential decreases in job openings were compensated by growth in the Chemical/Parachemical industry and in Energy, Water and Waste Management).

Industry sector (NACE: C, D, E) - Evolution of job positions declared to ADEM



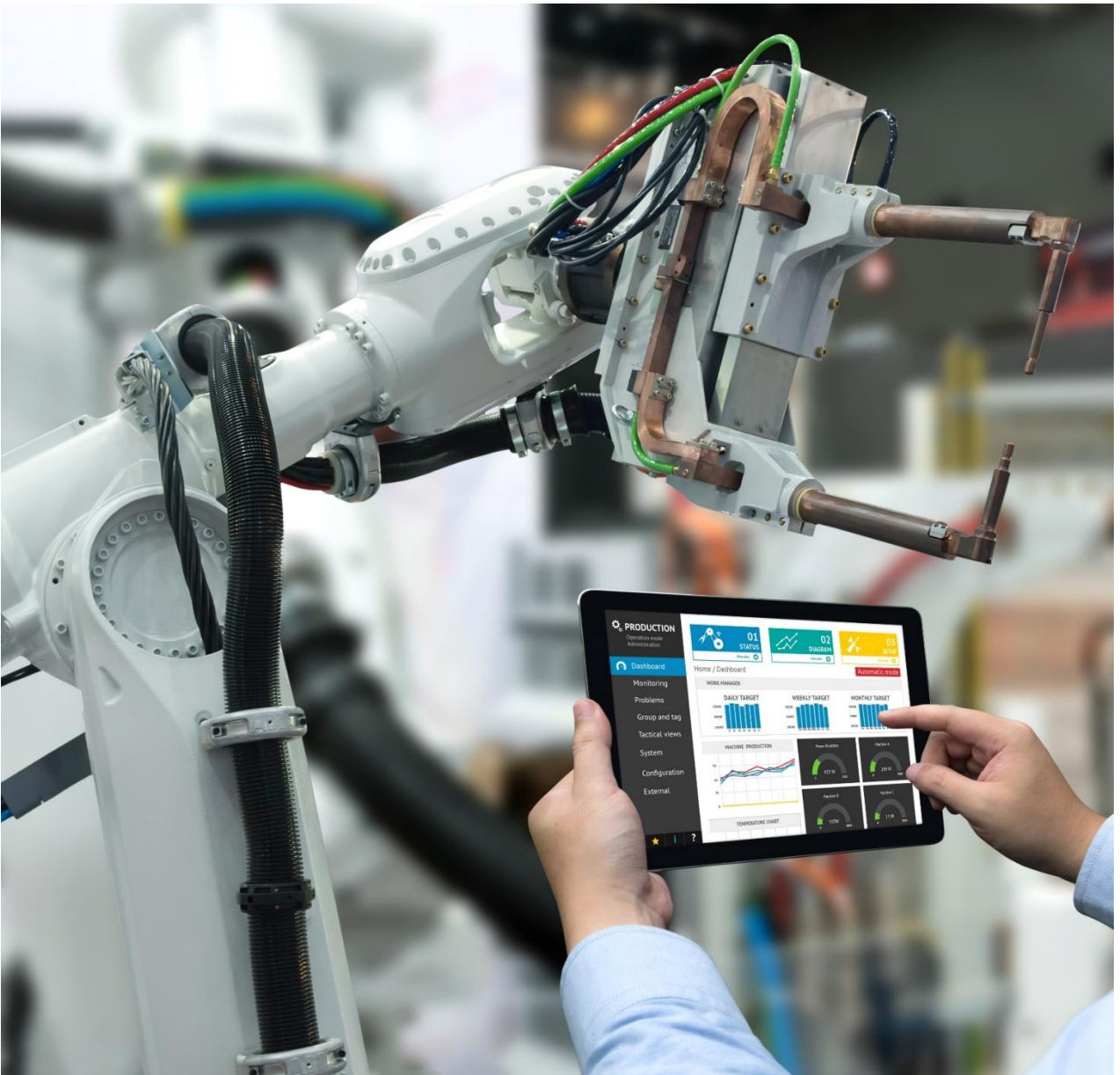
Job positions declared to ADEM (excluding employment measures)	2015	2016	2017	2018	2019	2020
C - MANUFACTURING INDUSTRY	1445	1260	1439	1739	1465	1306
(S1) Food, drink and tobacco industry	145	202	262	270	238	169
(S2) Iron and steel industry and metal processing	595	431	487	552	495	433
(S3) Chemical and parachemical industry / Non-metallic mineral products industry	298	322	330	419	354	429
Other manufacturing industries	407	305	360	498	378	275
D&E - ENERGY, WATER & WASTE MANAGEMENT	134	202	158	173	150	190

By comparison, actual recruitment in the sector (based on the entry declarations that employers make to the Centre Commun de la Sécurité Sociale (CCSS)) amounted to 7,050 in 2018, 6,590 in 2019 and 5,410 in 2020.¹ This difference is explained by the fact that a recruitment is not necessarily preceded by a vacancy publication, and that not all vacancies are declared to ADEM (despite the legal obligation).

Source: job vacancies declared to ADEM, expertise of ADEM employer advisors and the FEDIL

¹ <https://adem.public.lu/fr/marche-emploi-luxembourg/faits-et-chiffres/statistiques/igss/Tableaux-interactifs-flux-emploi.html>

2. Sectoral trends



Experts' perspectives

ADEM's Employer Advisors for the Industry sector

"Our role within the Employer Service department, set up at the end of 2013, is to best serve our clients in the Industry sector – at least those who, aware of the legal obligation and their social responsibility, declare their job vacancies to ADEM. This collaboration continuously leads to recruitments, with financial support from ADEM where applicable. The direct contact with our clients allows us to react quickly and constructively. In their search for candidates, whatever their level of qualification, companies have increasingly high requirements. Even though the qualifications searched by employers do not always match those of our jobseekers, the number of companies that work with ADEM continues to grow. The special relationship we have with the FEDIL and its members also gives us a better view of the trends in the terms of occupations and skills our clients are looking for."



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FEDIL

"The digital transformation and the energy transition are major challenges for industrial companies. They can only meet these challenges if they can count on employees with the right skills. Personal skills remain essential, as do increasingly advanced technical skills that are not necessarily acquired through formal education. Thus, major efforts in training, both in upskilling and reskilling, are vital and essential. In a rapidly changing economy, today's jobs will not necessarily be tomorrow's jobs. It is important to keep in mind that Luxembourg's industrial companies are constantly competing with companies from all over the world. Responsiveness of the various key players in the labour market and openness to change must be priorities in order to enable industrial companies to have the necessary skills and to ensure the integration, reintegration and employment preservation of workers."

Marc Kieffer, Secretary General, FEDIL

Main trends (1/2)

Technological trends

- Automation of repetitive and menial manual tasks through advances in robotics (increased productivity, reduced costs and production times)
- Data collection and analysis (Big Data) and prediction based on machine learning in order to optimise the production process
- Use of the cloud to share data, allowing better collaboration between sectors
- Investment in cybersecurity (due to cyber-espionage on patented products, to obtain confidential pricing information...)

Societal trends

- Sector strongly characterised by B2B, therefore less impacted by societal trends
- Need for transparency, flexibility, efficiency and competitive prices between companies and sectors
- Bringing together the construction and industry sectors to share tools, processes or working methods to reduce costs and increase efficiency (industrialised construction based on prefabrication)
- Increased demand for customised products

Environmental trends

- Industrial waste management
- Reduction of emissions
- Optimising the use of raw materials, recycling, innovation in the circular economy

Main trends (2/2)

Economic trends

- Competition and cost pressure from countries with cheaper access to production (and labour)
- Impact of the pandemic: industrial activities were able to recover quickly thanks to an upturn in external demand, most notably driven by China in the manufacture of rubber products, followed by computer, electronic, optical and electrical equipment products, as well as machinery and equipment¹
- For the chemical industry, products were in high demand during the Covid-19 pandemic¹

Legal / regulatory trends

- Environmental and safety regulations (against fire, explosiveness of raw materials, etc.)
- Fit for 55 (12 European Commission legislative proposals to put Europe at the forefront against climate change)
- “Companies and Human Rights Pact” to ensure human rights compliance throughout the supply chain

Employment trends

- Fairly stable sector in terms of recruitment and employment, low turnover
- Gender imbalance in employment → difficulty in attracting more women into the sector²
- Highly dependent on cross-border workers (and foreign residents)²
- Telework is not possible for a large proportion of employees

Source: research, expertise of ADEM employer advisors and the FEDIL

¹ <https://statistiques.public.lu/catalogue-publications/note-conjoncture/2020/PDF-NDC-02-20.pdf>

² <https://adem.public.lu/fr/marche-emploi-luxembourg/faits-et-chiffres/statistiques/igss/Tableaux-de-bord.html>

3. Occupation-level analysis



Occupation-level analysis: method

The aim of this chapter is to analyse the composition of the job vacancies in the Industry sector in terms of occupations, trends (growth, decline, emergence, stability) in these occupations and the degree of talent shortage. All occupations (sector-specific or transversal) recruited by employers in the sector are considered in this analysis.

This analysis is based solely on ADEM data, i.e. job positions declared to ADEM by employers from the Industry sector (cf. page 9). This excludes **employment measures** and vacancies reported by temporary work agencies ("agences d'intérim"), where we have no information on the employers nor the sector they are attached to.

Vacancies that have not been declared to ADEM are not included in the analysis. We are aware of the limitations of this approach as the vacancies reported to ADEM do not cover all the vacancies/actual recruitments in the market and are therefore not fully representative.

For this reason, we do not draw conclusions on the total number of recruitments in Luxembourg by occupation; we only analyse *relative* figures: the proportion of the different occupations among all jobs declared by the sector, the growth trend of the jobs declared for an occupation, the degree of talent shortage of an occupation by comparing the number of declared vacancies to the number of eligible candidates among jobseekers.

To analyse growth trends, we compare the years when ADEM's coverage rate (of actual market recruitments) remains sufficiently comparable.

Despite these precautions, the relative analyses (proportions, trends, shortages) are still not entirely representative. We have therefore collaborated with the FEDIL to confront our data with their knowledge of the reality of the sector. This collaboration allowed us to place our quantitative analyses into a context and add qualitative input and explanations.

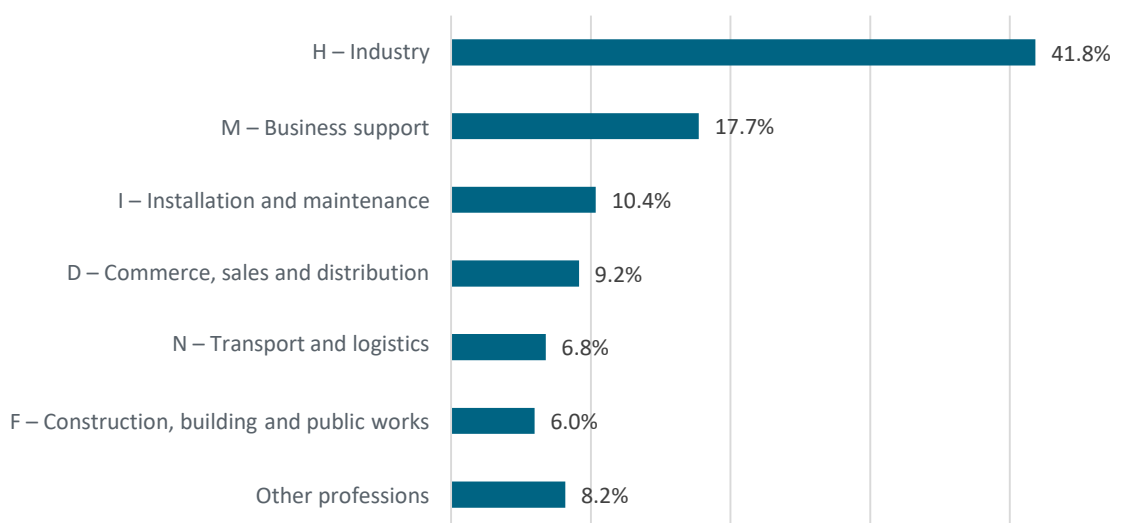
In the future, and in order to considerably improve the reliability of our studies, it is essential that the rate of job vacancies declared to ADEM increases and corresponds better to the actual reality of the labour market. And this not only for the purpose of finding the right candidates, but also to increase the transparency of the labour market and the possibility to analyse real market needs, trends and shortages.

To structure the occupations in our analyses, we base ourselves on the **ROME** classification, which ADEM has used since 2014 to categorise its vacancies according to a typology of occupations. The ROME classification includes different levels of granularity, and the level used in our analyses varies according to what is considered most useful. For each reference to an occupation ("métier" according to ROME) or function ("appellation" according to ROME) used in this document, a description is provided in Chapter 5.

Distribution across categories of occupations

First, we present the distribution of jobs declared by the Industry sector (over the 2015 – 2020 period) across the different occupation categories. These categories are based on the ROME classification. The graph shows that the sector is composed by a variety of professions, such as typical industry professions, support professions (administrative, IT, commercial, etc.) and professions typically belonging to other sectors (construction, logistics). Thus, typical industrial professions account for 42% of positions in the sector (according to the vacancies declared to ADEM), followed by business support jobs with 18%, installation and maintenance (11%), commerce (9%), transport and logistics (7%) and construction professions (6%). The distribution is more varied than, for example, in the Construction or Hospitality sectors (which are more strongly characterised by their typical professions).

Industry sector (NACE: C, D, E) - Distribution of declared job positions across occupation categories (2015-2020)



The only particular trend to note in the evolution of this distribution is the percentage of jobs declared for construction professions, which has more than doubled since 2015 (see page 12 and the collaboration between the industry and construction sectors).

Categories of occupations	2015	2016	2017	2018	2019	2020
H - Industry	46.6%	37.6%	38.1%	39.6%	43.0%	46.5%
M - Business support	16.5%	19.2%	15.8%	19.0%	17.6%	18.2%
I - Installation and maintenance	11.0%	9.6%	12.0%	10.2%	9.7%	9.6%
D - Commerce, sales and distribution	7.5%	10.1%	12.5%	8.6%	9.4%	6.9%
N - Transport and logistics	7.3%	9.5%	5.6%	5.8%	6.5%	6.2%
F - Construction, building and public works	3.0%	4.7%	7.5%	7.9%	5.4%	6.8%
Other professions	8.0%	9.4%	8.5%	8.9%	8.3%	5.7%

Source: job vacancies declared to ADEM

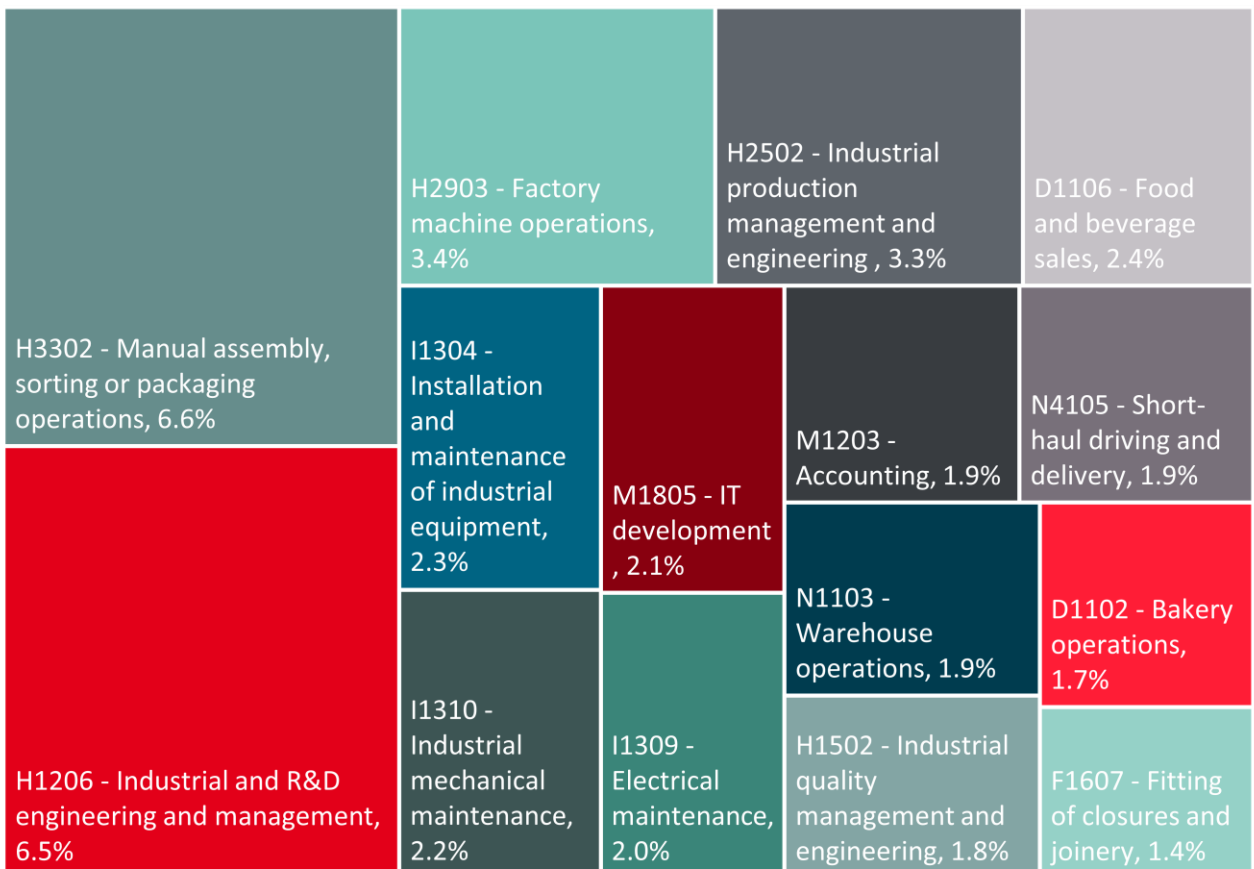
Most in-demand occupations ("Top 15")

The following illustration shows the "Top 15" most in-demand occupations (level 3 of the ROME reference system) as well as their proportional share among all the job positions declared by this sector over the 2015 - 2020 period.

The graph shows a certain balance of proportion among the most in-demand occupations in the sector. The main occupations, each with 6.6%/6.5% of job postings, are those of manual assembly workers and of industrial engineers. They are followed by 3. machine operators (3.4%), 4. production managers (3.3%), 5. food salespeople (e.g. in industrial bakeries) (2.4%), 6. industrial

equipment technicians (2.3%), 7. industrial mechanics (2.2%), 8. IT developers (2.1%), 9. electricians (2%), 10. accountants (1.9%), 11. delivery drivers (1.9%), 12. warehouse workers (1.9%), 13. quality managers (1.8%), 14. bakers (in industrial bakeries) (1.7%) and 15. fitters of closures and joinery (1.4%).

THE OCCUPATIONS MOST IN-DEMAND BY EMPLOYERS IN THE INDUSTRY SECTOR (2015 - 2020)

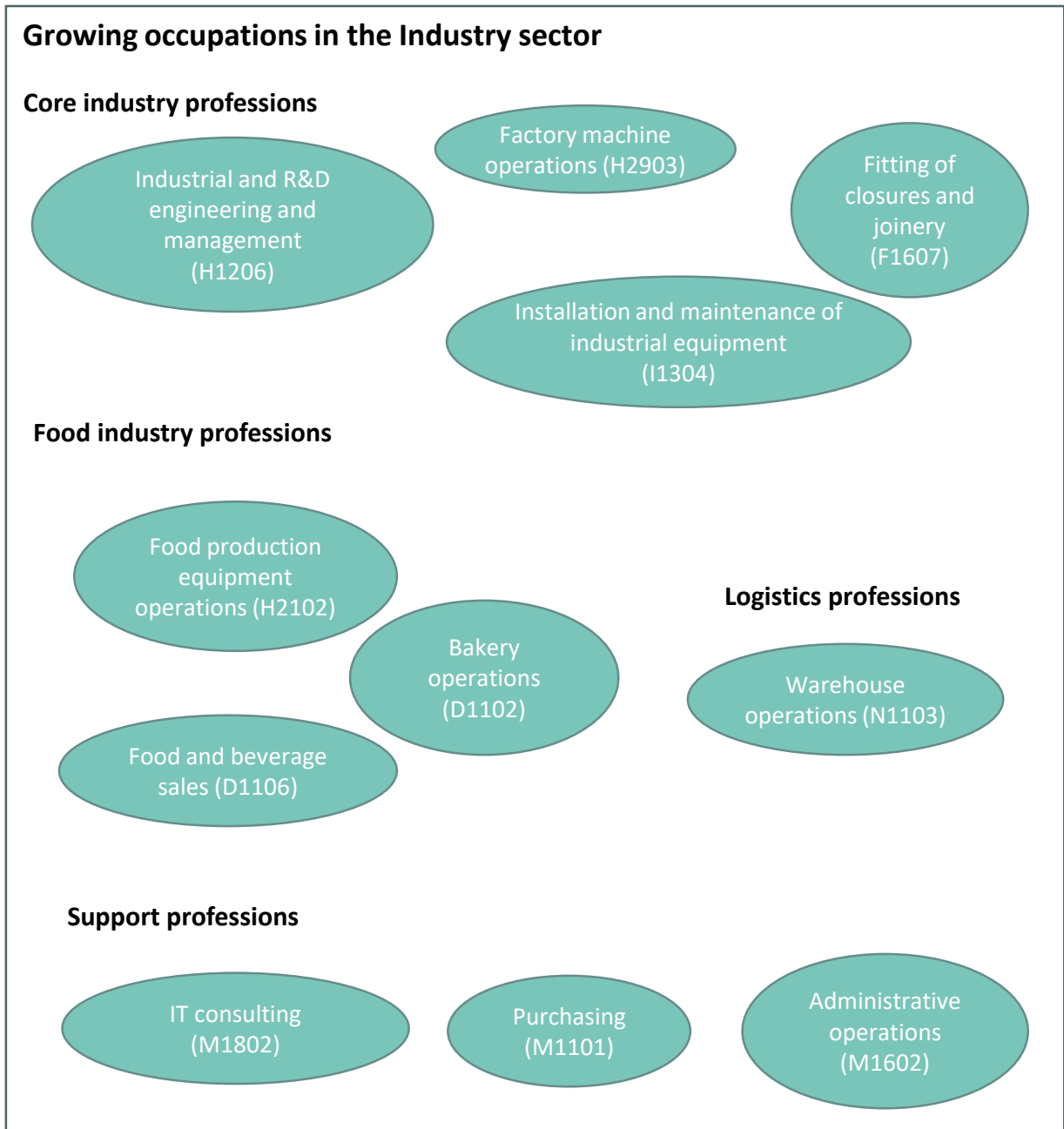


Source: job vacancies declared to ADEM

Note: the definitions of the occupations are available in Chapter 5 (ROME Glossary)

Growing occupations (1/5)

Following the analysis of the distribution, we consider the trends (growth, decline, emergence, stability) for the different occupations recruited in the industry sector, starting with growth. The following illustration shows the 11 occupations for which a growth trend in demand from employers has been identified, based on the vacancies reported to ADEM.



Growing occupations (2/5)

Three indicators have been considered for this list:

1. the evolution of the occupation's proportional share among all the jobs declared by the sector;
2. the evolution of declared job positions between 2015 and 2020 (illustrated by the Trendline);
3. the contribution to growth between 2016 and 2019, i.e. the rate by which the occupation contributed to the growth of all jobs reported by the sector between 2016 and 2019 (this indicator takes into account both the growth trend and the importance of this occupation to the sector).

The data for the three indicators is detailed below for the 11 occupations for which a growth trend has been identified (given that these conclusions are based on our own judgement, we share the data transparently, allowing the reader to draw their own conclusions).

The trend is also based on a view of the past (2015 - 2020 period) and does not take into account possible developments that could influence the trend in the future.

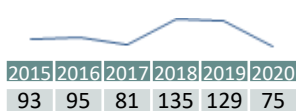
Core industry professions

Industrial and R&D engineering and management (H1206)

Evolution of proportional share

2015	2016	2017	2018	2019	2020
5.89%	6.50%	5.07%	7.06%	7.99%	5.01%

Trendline ¹



Contribution to growth ²

+22.2%

Industrial engineering positions (including research and development of new products and processes) grew in 2018/2019, both in terms of volumes (Trendline) and their proportional share among the sector's jobs. This explains their high contribution (22.2%) to the growth of all job positions in the sector between 2016 and 2019. The significant decline in 2020 has been excluded from this trend analysis, due to the particular nature of that year marked by Covid-19, but it will have to be monitored in the coming years.

Sources: job vacancies declared to ADEM, expertise of ADEM employer advisors and the FEDIL

¹ Illustration of the evolution of the volumes of job positions declared between 2015 and 2020

² Contribution of the occupation to the growth of all job positions declared by the sector between 2016 and 2019

Growing occupations (3/5)

Factory machine operations (H2903)

Evolution of proportional share

2015	2016	2017	2018	2019	2020
3.42%	2.67%	4.57%	2.93%	3.90%	1.87%

Trendline ¹



Contribution to growth ²
+15.7%

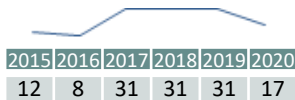
The number of positions for machine operators has fluctuated over the years. The contribution to growth between 2016 and 2019 is remains positive and significant (partly because there was a drop in 2016), but will need to be monitored.

Fitting of closures and joinery (F1607)

Evolution of proportional share

2015	2016	2017	2018	2019	2020
0.76%	0.55%	1.94%	1.62%	1.92%	1.14%

Trendline ¹



Contribution to growth ²
+15%

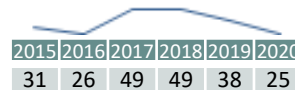
Fitters of closures and joinery experienced a significant increase in positions and proportional share from 2016 to 2017, and have remained fairly stable since then (with a slight decline in 2020). The contribution to the growth in total positions in the sector is significant at 15%.

Installation and maintenance of industrial equipment (I1304)

Evolution of proportional share

2015	2016	2017	2018	2019	2020
1.96%	1.78%	3.07%	2.56%	2.35%	1.67%

Trendline ¹



Contribution to growth ²
+7.8%

The demand for industrial equipment installation and maintenance technicians increased from 2016 to 2017 and then declined slightly again from 2019 onwards. The contribution to growth remains positive and significant.

Logistics professions

Warehouse operations (N1103)

Evolution of proportional share

2015	2016	2017	2018	2019	2020
1.84%	1.37%	1.75%	1.52%	2.11%	2.34%

Trendline ¹



Contribution to growth ²
+9.2%

Positions for warehouse workers have grown steadily since 2016 and have been a significant contributor to growth in the sector. Their proportional share has increased in recent years (2019 and 2020) compared to other occupations in the sector. During the pandemic, these occupations were an important pillar.

Sources: job vacancies declared to ADEM, expertise of ADEM employer advisors and the FEDIL

¹ Illustration of the evolution of the volumes of job positions declared between 2015 and 2020

² Contribution of the occupation to the growth of all job positions declared by the sector between 2016 and 2019

Growing occupations (4/5)


Food industry professions

Food production equipment operations (H2102)

Evolution of proportional share

2015	2016	2017	2018	2019	2020
0.25%	0.62%	0.63%	0.47%	0.93%	1.60%

Trendline ¹



2015	2016	2017	2018	2019	2020
4	9	10	9	15	24

Contribution to growth ²
+3.9%


Food production equipment operators saw continued growth, which accelerated in 2019. In 2020, their proportional share increased sharply compared to other occupations in the sector (which may have been more affected by the pandemic).

Bakery operations (D1102)

Evolution of proportional share

2015	2016	2017	2018	2019	2020
1.39%	1.23%	1.94%	1.67%	1.42%	1.94%

Trendline ¹



2015	2016	2017	2018	2019	2020
22	18	31	32	23	29

Contribution to growth ²
+3.3%

The job of the baker in the industrial sector (i.e. industrial bakeries) was especially on the rise between 2016 and 2018, contributing 3.3% to growth. Between 2018 and 2020, positions fluctuated but the occupation's proportion still increased relative to other occupations.

Food and beverage sales (D1106)

Evolution of proportional share

2015	2016	2017	2018	2019	2020
1.14%	2.12%	4.70%	1.83%	2.91%	1.47%

Trendline ¹



2015	2016	2017	2018	2019	2020
18	31	75	35	47	22

Contribution to growth ²
+10.5%

After a peak in 2017, the food and beverage sales positions have rather fluctuated. The contribution to growth between 2016 and 2019 has remained significant at 10.5%.

Sources: job vacancies declared to ADEM, expertise of ADEM employer advisors and the FEDIL

¹ Illustration of the evolution of the volumes of job positions declared between 2015 and 2020

² Contribution of the occupation to the growth of all job positions declared by the sector between 2016 and 2019

Growing occupations (5/5)

Support professions

Administrative operations (M1602)

Evolution of proportional share

2015	2016	2017	2018	2019	2020
1.08%	1.23%	0.94%	1.52%	1.49%	0.87%

Trendline ¹



Contribution to growth ²
+3.9%

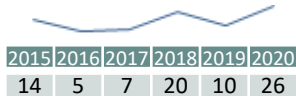
Despite a drop in volumes and proportional share of administrative agents since 2018 (potentially due to automation trends), the contribution to growth of this occupation still remains slightly positive, at +3.9%.

IT consulting (M1802)

Evolution of proportional share

2015	2016	2017	2018	2019	2020
0.89%	0.34%	0.44%	1.05%	0.62%	1.74%

Trendline ¹



Contribution to growth ²
+3.3%

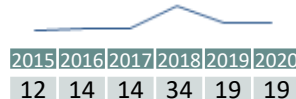
With the technological trends in this sector (cf. page 12), it seems natural that demand for IT occupations (in this case, IT consulting) has grown, as illustrated by the three indicators. In 2020, their proportional share increased significantly compared to other occupations in the sector (which were perhaps more affected by the pandemic).

Purchasing (M1101)

Evolution of proportional share

2015	2016	2017	2018	2019	2020
0.76%	0.96%	0.88%	1.78%	1.18%	1.27%

Trendline ¹



Contribution to growth ²
+3.3%

The purchasing profession has experienced a slight but continuous growth (except for the peak in 2018) and contributed 3.3% to the growth of total positions in the sector. This occupation is highly dependent on the volume of production in the sector and evolves accordingly.

Sources: job vacancies declared to ADEM, expertise of ADEM employer advisors and the FEDIL

¹ Illustration of the evolution of the volumes of job positions declared between 2015 and 2020

² Contribution of the occupation to the growth of all job positions declared by the sector between 2016 and 2019

Declining occupations

Other occupations are experiencing a downward trend in terms of volumes and proportional share in the sector. This is the case in particular for certain jobs in the printing industry (printing machine operators and prepress/graphics operators), basic customer support and sales (call-center roles, etc.), low-skilled manual jobs (manual and mechanical assembly, manual welding, forklifting, etc.) and cleaning activities.

	Declared positions (2015-2020)						Evolution of proportional share					
	2015	2016	2017	2018	2019	2020	2015	2016	2017	2018	2019	2020
Printing machine operations (E1301)	9	6	6	7	5	5	0.57%	0.41%	0.38%	0.37%	0.31%	0.33%
Prepress (E1306)	7	6	3	2	2	2	0.44%	0.41%	0.19%	0.10%	0.12%	0.13%
Telesupport and telesales (D1408)	4	8	2	1	4	0	0.25%	0.55%	0.13%	0.05%	0.25%	0.00%
Customer assistance and technical support (H1101)	7	4	4	6	1	0	0.44%	0.27%	0.25%	0.31%	0.06%	0.00%
Mechanical assembly (H2909)	35	20	23	18	7	3	2.22%	1.37%	1.44%	0.94%	0.43%	0.20%
Manual welding (H2913)	38	10	12	7	18	4	2.41%	0.68%	0.75%	0.37%	1.11%	0.27%
Manual assembly, sorting or packaging (H3302)	140	74	123	158	59	65	8.87%	5.08%	7.67%	8.25%	3.63%	4.31%
Forklift operations (N1101)	17	15	3	5	3	3	1.08%	1.03%	0.19%	0.26%	0.19%	0.20%
Cleaning activities (K2303)	23	8	5	8	1	0	1.46%	0.55%	0.31%	0.42%	0.06%	0.00%

The majority of these decreases can be explained by the automation of processes and investments in robotics to reduce arduous and repetitive tasks – mainly manual ones (assembly, welding, driving forklifts...) or those with basic customer contact (call-center sales and support).

Sources: job vacancies declared to ADEM, expertise of ADEM employer advisors and the FEDIL

Emerging occupations

As for emerging occupations, i.e. occupations which were not or hardly in demand in the sector 5 years ago but which are beginning to appear/increase in job vacancies, our data provides some leads. It should be noted that the existing ROME codes are quite fixed in time and are not always granular enough to capture all of the emerging trends.

Despite these limitations, we can observe some trends of emergence, such as in business engineering (in line with the recent FEDIL study "[Qualifications de demain dans l'industrie](#)"), automation and robotics, health & safety, material & product revalorisation, production of construction materials (see trend on page 12), logistics and for some support activities (human resources, commercial strategy, legal advice).

	Declared positions					
	2015	2016	2017	2018	2019	2020
Industrial business engineering (H1102)	4	8	8	11	11	8
Technical operations in automation and robotics (H1208)	5	1	4	3	24*	5
Machine operations for electronic products and components (H2603)	6	2	1	2	15	23
Industrial Health Safety Environment -HSE- management and engineering (H1302)	7	4	8	6	11	8
Operations in harmful environments and products (I1503)	0	0	1	12	10	12
Revalorisation of industrial products (K2304)	3	0	7	3	6	3
Eco-industrial operations (K2306)	0	0	1	3	0	3
Machine operations for building materials (H2802)	0	0	2	3	10	0
Logistics operations (N1303)	12	10	9	17	10	18
Human resources assistance (M1501)	8	4	13	13	13	15
Commercial strategy (M1707)	9	7	6	15	11	14
Legal advice (K1903)	4	5	3	14	7	7

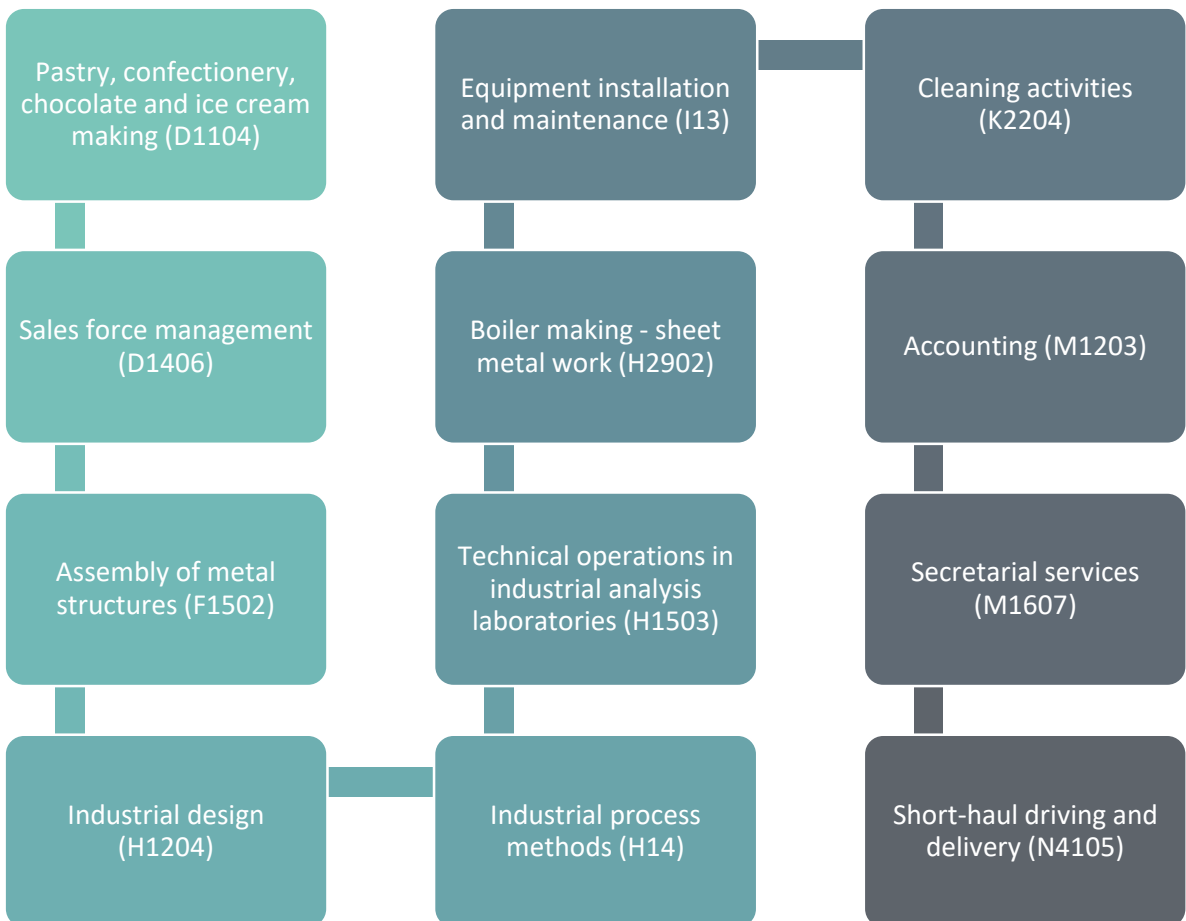
* anomaly: 20 positions at the same time by the same employer

Source: job vacancies declared to ADEM, expertise of ADEM employer advisors and the FEDIL

Occupations with no particular trend

For other (significant) occupations in the sector, no particular trend has been identified over the 2015 - 2019 period, i.e., declared job positions were fairly stable or fluctuated too much to identify a clear trend.

This is the case for pastry chefs, sales force managers, metal structure assemblers, industrial designers, industrial process technicians, and industrial laboratory workers. In addition to this, they include boilermakers/sheet metal workers, industrial equipment professions, cleaning staff, accountants, secretaries and (short-haul) delivery drivers.



Source: job vacancies declared to ADEM

Impact of the pandemic on the occupations

Although the Covid-19 pandemic had an initial negative impact on the Industry sector, the latter was able to recover quickly.

Some occupations even gained in importance in terms of volume and proportional share in 2020 compared to 2019.

These include occupations of industrial process technicians, food production operators, electronic product manufacturing operators, robotic equipment operators, IT consultants and logisticians.

Evolution of proportional share (in %) and of declared positions (in volume)

	2015	2016	2017	2018	2019	2020
Industrial process support (H1404)	0.25%	0.27%	0.13%	0.05%	0.31%	0.67%
	3	3	2	1	4	10
Food production equipment operations (H2102)	0.25%	0.62%	0.63%	0.47%	0.93%	1.60%
	4	9	10	9	15	24
Machine operations for electronic products and components (H2603)	0.38%	0.14%	0.06%	0.10%	0.93%	1.54%
	6	2	1	2	15	23
Robotic equipment operations (H2906)	0.32%	0.34%	0.06%	0.31%	0.31%	0.47%
	5	5	1	6	5	7
IT consulting (M1802)	0.89%	0.34%	0.44%	1.05%	0.62%	1.74%
	10	5	6	11	7	21
Logistics operations (N1303)	0.76%	0.68%	0.56%	0.89%	0.62%	1.20%
	11	10	8	17	7	17

Source: job vacancies declared to ADEM

Occupations with the greatest shortage of candidates (1/2)

After analysing the growth trends, we now focus on the shortage level for the various occupations recruited in the Industry sector. To assess the degree of shortage, three indicators are taken into account for the 2018 - 2020 period:

1. the average number of matches (= definitive proposals of candidates by ADEM advisors) made per declared position;
2. the rate of declared job vacancies to which no suitable candidates (among the available jobseekers) could be proposed;
3. A direct comparison between registered jobseekers registered under this specific occupation (candidates) and the number of positions reported for the occupation (across all sectors).

Example	Average matches/position (18-20)	Rate of unmatched vacancies (18-20)	Candidates/position (18-20)
	0.7	26%	0.6

These three indicators provide a complementary perspective on the level of shortage. The candidates/position comparison shows how many jobseekers are theoretically looking for a job in this occupation compared to the number of declared positions (an indicator below 1 indicates a basic lack of hypothetical candidates for the occupation). On the other hand, the average of the matches and the rate of unmatched vacancies give an indication of the (mis-)match of qualifications/skills between positions and candidates.

Occupations that are not significant in the sector at all (i.e. very few declared positions) are excluded from the shortage analysis.

The occupations for which the degree of shortage appears to be strongest (based on the three indicators: very few matches on average, high rate of unmatched vacancies, candidates/position < 1) are listed on the following page.

On the one hand, these include occupations requiring higher (university) qualifications, such as industrial engineers (including R&D managers), R&D technicians and industrial quality managers. On the other hand, the shortage is also high for certain manual occupations requiring specific qualifications, such as the fitting of closures and joinery, the operation of machining equipment, the manufacturing of metal structures, as well as the installation and maintenance of industrial equipment. Finally, business support occupations, such as technical sales, purchasing, auditing, product management and IT (especially IT consulting/contracting and IT development) are also affected by a significant shortage.

(Other occupations may also be experiencing labour shortages, but the list of occupations on the next page is limited to those that appear to be most affected).

Occupations with the greatest shortage of candidates (2/2)



Attention: there might still be a skills shortage

Occupations with a surplus of candidates

In contrast, some occupations have a surplus of candidates, i.e. more jobseekers are registered for the occupation than there are declared positions.

This does not mean that employers do not experience shortages in these occupations. A surplus of candidates that theoretically fit the vacancy does not exclude a shortage in terms of skills, and employers may still have difficulty finding "the right candidate".

Occupations with a surplus of candidates (as well as a rather high average matches/position rate and a lower rate of unmatched vacancies) are listed below.

These include food & beverage sales, cleaning, reception staff, administrative operations, secretarial services, warehouse operations and (short-haul) delivery. It is interesting to note that there are no "core industry occupations" on that list.

	Average matches/position (18-20)	Rate of unmatched vacancies (18-20)	Candidates/position (18-20)
Food and beverage sales (D1106)	6.3	2%	3.6
Cleaning activities (K2204)	6.8	0%	3.4
Reception activities (M1601)	8.4	0%	3.9
Administrative operations (M1602)	8.2	2%	4.3
Secretarial services (M1607)	6.4	6%	1.7
Warehouse operations (N1103)	3.7	8%	2.4
Short-haul driving and delivery (N4105)	5.5	2%	3.4

Source: job vacancies declared to ADEM, expertise of ADEM employer advisors and the FEDIL

Conclusion of the occupation-level analysis (1/2)

On the basis of the preceding analysis, we are now able to draw some cautious conclusions on which occupations should be given priority in career guidance, initial and continuous training and talent attraction. This also provides a framework for identifying the target groups to whom training and guidance for upskilling and reskilling should be offered in priority. These conclusions are based on the trend (growth, decline, stability, emergence) and the level of shortage identified for the occupation. Since these are strictly based on the past however (2015-2020), it is useful to add a third, more future-oriented dimension: the risk of automation of the occupation.

This indicator is here based on a study conducted by researchers at Oxford University¹, which estimated (in 2017) the risk of automation for 702 different occupations (according to the SOC benchmark, used in Anglo-Saxon countries). The method of this study and the results are certainly debatable, but it is still the most comprehensive and granular analysis of the automation risks for such a variety of occupations. To use this study, we have therefore linked our ROME occupations to the closest SOC occupation. Given the limitations of this study, we have not used the precise figure for the risk of automation but rather a classification (high, low, moderate, etc.), which should only give an indication of the potential future evolution of the occupation.

Priority occupations

The following occupations, which - on the basis of our analysis - are experiencing a shortage and/or a growth trend, and are not too strongly under risk of automation in the near future, can be considered as priority occupations in career guidance, training (initial and continuous) and talent attraction.

Occupations	Positions 2018-2020	Trend	Shortage	Risk of automation, according to F&O ¹
F1607 - Fitting of closures and joinery	79	growth	shortage	moderate
H1102 - Industrial business engineering	30	emergence	balanced	low
H1206 - Industrial and R&D engineering and management	339	growth	shortage	low
H1208 - Technical operations in automation and robotics	32	emergence	balanced	low
H1210 - Technical operations in industrial R&D	45	/	shortage	low
H1302 - Industrial Health Safety Environment - HSE- management and engineering	25	emergence	balanced	low
H1502 - Industrial quality management and engineering	81	/	shortage	low
H2903 - Factory machine operations	147	growth	shortage	rather high
I1304 - Installation and maintenance of industrial equipment	112	growth	shortage	moderate
M1101 - Purchasing	72	growth	shortage	low

¹ Frey, C.B., Osborne, M. (2017): The future of employment: How susceptible are jobs to computerisation? Technological Forecasting and Social Change, Volume 114. FACILITONS L'EMPLOI

Conclusion of the occupation-level analysis (2/2)

Priority target groups (for upskilling and reskilling)

The following occupations are, based on the data, experiencing a surplus of candidates, a risk of automation and/or a downward trend. Candidates working in these occupations or originating from them (in the case of jobseekers) can be targeted as priority groups in training and guidance for upskilling or reskilling trajectories. The last column of the table provides some examples of potential upskilling/reskilling trajectories. These remain purely indicative and should be evaluated and developed further with the social partners.

Occupations	Trend	Shortage	Risk of automation, according to F&O ¹	Upskilling/reskilling trajectories
E1301 - Printing machine operations	decline	/	rather high	Factory machine operations (H2903), Food production equipment operations (H2102)
E1306 - Prepress	decline	/	high	Multimedia content production (E1205), Multimedia content design (E1104)
H2909 - Mechanical assembly	decline	/	rather high	Fitting of closures and joinery (F1607), Manufacturing of metal structures (H2911), Factory machine operations (H2903), Installation and maintenance of industrial equipment (I1304)
H2913 - Manual welding	decline	/	rather high	Fitting of closures and joinery (F1607), Manufacturing of metal structures (H2911), Factory machine operations (H2903)
H3302 - Manual assembly, sorting or packaging operations	decline	/	moderate	Fitting of closures and joinery (F1607), Manufacturing of metal structures (H2911), Factory machine operations (H2903)
M1601 - Reception activities	/	surplus	high	Commercial assistance (D1401), Human resources assistance (M1501), Market surveys (M1401), Technical-commercial relations (D1407)
M1602 - Administrative operations	growth	surplus	high	Purchasing (M1101), Commercial assistance (D1401), Human resources assistance (M1501)
M1607 - Secretarial services	decline	surplus	high	Commercial assistance (D1401), Executive assistance (M1604), Legal secretary (M1607)
N4105 - Short-haul driving and delivery	/	surplus	moderate	Long-haul freight transport (N4101), Public road transport (N4103)

¹ Frey, C.B., Osborne, M. (2017): The future of employment: How susceptible are jobs to computerisation? Technological Forecasting and Social Change, Volume 114. FACILITONS L'EMPLOI

4. Skills-level analysis



Skills-based analysis: method

The job vacancies declared to ADEM contain a wealth of information regarding skills required by Luxembourg-based companies. This information exists mainly in an unstructured format (as job descriptions). The only structured data that exists in a comprehensive and reliable way are the languages and level of experience required. In order to make use of this unstructured data, ADEM decided to collaborate with an external provider (based in Europe) who has developed a text mining (automated text analysis) approach to extract structured data on the skills mentioned in the job vacancy descriptions. This model is widely used by the European Commission in its [Skills-OVATE](#) project and has proven to be sufficiently reliable for this type of analysis.

However, it should be noted that text mining techniques are still in a development phase and may generate errors or miss certain information. A distinct advantage is the ability to analyse large volumes of text in a very short amount of time and at a low cost.

The model also works in different European languages (English, French, German...).

In May 2021, ADEM shared the descriptions of 142,000 job offers (years 2015 - 2021¹) with the provider and obtained the results in June 2021. 1.28 million mentions of specific skills were identified in these job offers.

For a majority of the identified skills, the service provider has made the link with the [ESCO](#) skills reference framework. This makes it possible to analyse the skills according to a hierarchy of granularity and different categories (Attitudes & Values, Skills, Knowledge). The ESCO hierarchy

also has some limitations (e.g. overlaps between attitudes & values and skills & knowledge, hierarchy choices that are sometimes difficult to understand...) but has the advantage of being a granular and internationally recognised reference framework.

Language skills are excluded from the text mining analysis because ADEM possesses structured (more reliable) data on languages that was analysed separately.

The results give an indication of the skills in demand by Luxembourg-based companies, by sector (NACE) and by occupation (ROME), as well as the evolution of this demand over time. It should be noted, however, that a job vacancy advertisement does not necessarily provide a complete picture of the skills that are actually required to perform a job: it is often written in a particular way to appear more attractive and therefore rarely includes the less "marketable" skills (e.g. stress management) nor the more technical skills of the job which might appear obvious.

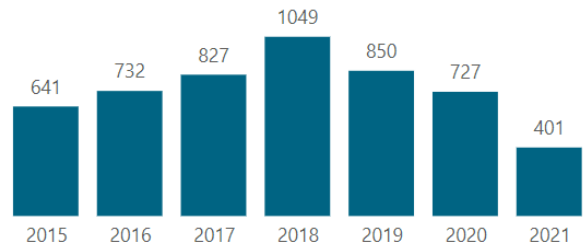
While this data will be used for more in-depth analysis, ADEM takes advantage of these sectoral studies to give a first overview of the skills advertised by the sector and for some key occupations in this particular sector (as well as trends in the evolution).

¹ The year 2021 includes data until the end of April

Skills-level analysis: Industry sector

Among the 7,178 job vacancies declared to ADEM (2015-April 2021) by employers in the Industry sector and including at least a minor job vacancy description, 5,227 (i.e. the majority) included explicitly mentioned skills (identifiable by text mining). The following graph shows the distribution of these offers over the years.

5227
offers



Among these 5'227 job vacancies that showed results, we can specify to what degree a specific skill or a category of skills has been identified (at least once).

The graph below shows these rates for the different categories of the ESCO classification (at their highest hierarchy level: ESCO 0):

- **Attitudes and values:** in 70% of the job vacancies, at least one mention of an *attitude* or *value* was identified.
- **Knowledge:** the overall rate of vacancies in which at least one mention of a specific *knowledge* has been identified is around 83%.
- **Skills:** the overall rate of vacancies in which at least one mention of a specific *skill* has been identified is around 80%.
- There remain 8% of vacancies in which a skill has been identified that was not linked to the ESCO framework (this data is excluded from the analysis hereafter).

ESCO 0	2015	2016	2017	2018	2019	2020	2021	Total
For all three categories, the requirements have increased since 2015.	8%	8%	8%	5%	9%	8%	9%	8%
⊕ attitudes and values	69%	66%	67%	74%	71%	70%	77%	70%
⊕ knowledge	81%	83%	82%	84%	84%	84%	85%	83%
⊕ skills	80%	81%	76%	82%	81%	79%	84%	80%

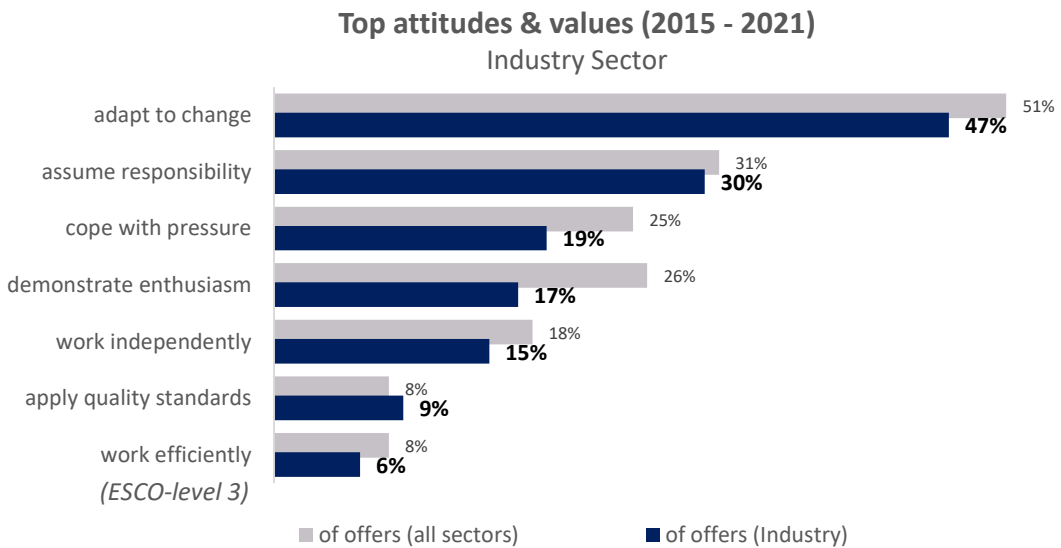
The remainder of this chapter presents the most in-demand skills (distinguishing between "attitudes & values" and "skills & knowledge") mentioned in the job vacancies of the Industry sector and for some key occupations within the sector (as well as the trends in their evolution).

Most in-demand attitudes & values in the Industry sector

The graph below presents the attitudes and values that are the most in demand in job vacancies declared by employers in the Industry sector over the 2015 - 2021 (until April) period. These skills are captured at the ESCO level 3 and the definitions can be found on the classification's [website](#).

The graph shows, in blue, the percentage of job offers in the Industry sector in which the skill was mentioned and, in grey, the percentage of all job offers (across all sectors) in which the skill was mentioned.

The most in-demand value/attitude was adapting to change (which is the case for the majority of sectors), with 47% of job vacancies mentioning it. We also note that job vacancies in the Industry sector generally require less attitudes/values than other sectors on average. The only attitude/value that was more in-demand in the Industry sector was the application of quality standards.

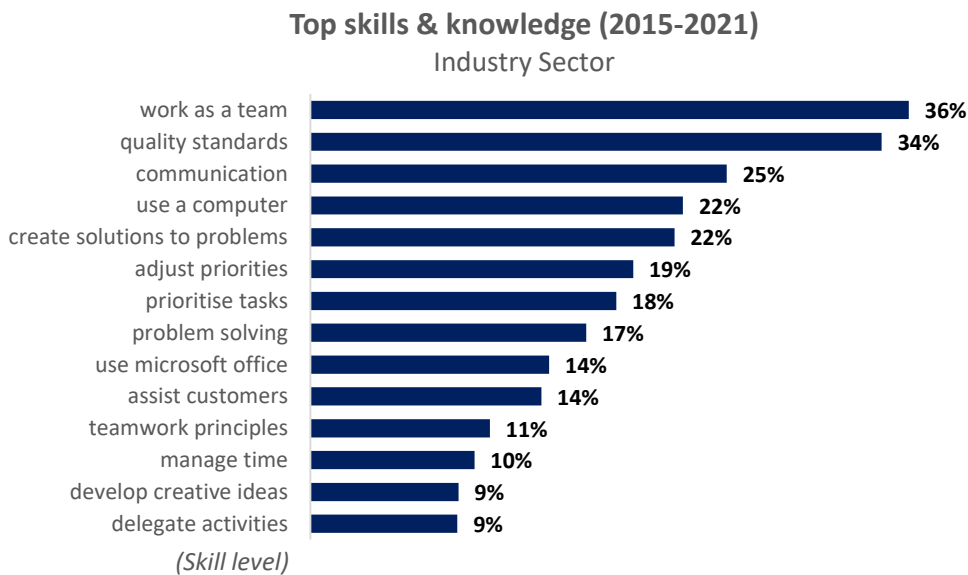


As for the evolution, we observe a general growth trend in the demand for the different attitudes and values, and in particular a strong growth for coping with pressure management, enthusiasm and autonomy.

Evolution of top attitudes & values	Year						
	2015	2016	2017	2018	2019	2020	2021
adapt to change	46%	47%	41%	53%	49%	44%	54%
assume responsibility	34%	27%	27%	29%	28%	30%	38%
cope with pressure	14%	16%	16%	22%	22%	20%	25%
demonstrate enthusiasm	12%	14%	15%	17%	19%	19%	25%
work independently	9%	10%	17%	17%	15%	18%	18%
apply quality standards	8%	9%	8%	9%	10%	10%	10%
work efficiently	5%	6%	5%	6%	5%	6%	7%

Most in-demand skills & knowledge in the Industry sector (1/2)

Skills & knowledge are also captured at ESCO level 3. In the Industry sector, the skills of working as a team, quality standards and communication are mentioned most frequently. They were explicitly requested in about a third of the vacancies over the 2015-2021 period.



The evolution shows a general growth in demand for the majority of these skills since 2015, with a particularly strong growth in 2021. Computer/software use and problem-solving have particularly increased in importance.

Evolution of top skills & knowledge

	2015	2016	2017	2018	2019	2020	2021
work as a team	33%	35%	33%	39%	38%	36%	40%
quality standards	38%	33%	32%	34%	35%	35%	37%
communication	20%	22%	21%	30%	28%	20%	30%
use a computer	17%	23%	22%	23%	22%	24%	27%
create solutions to problems	19%	19%	17%	24%	23%	24%	30%
adjust priorities	16%	19%	18%	20%	21%	21%	23%
prioritize tasks	15%	18%	17%	19%	20%	19%	23%
problem solving	13%	14%	13%	19%	17%	19%	24%
use microsoft office	10%	14%	16%	16%	13%	15%	17%
assist customers	13%	14%	11%	16%	17%	11%	16%
teamwork principles	10%	12%	10%	11%	11%	9%	13%
manage time	8%	10%	9%	11%	11%	9%	12%
develop creative ideas	9%	8%	9%	8%	10%	10%	10%
delegate activities	8%	8%	8%	9%	11%	8%	12%

Most in-demand skills & knowledge in the Industry sector (2/2)

In addition to the top skills mentioned on the previous page, others can be identified as emerging skills (having a growth trend, but still not very significant in volume).

Emerging skills

Interpersonal skills

	2015	2016	2017	2018	2019	2020	2021
assertiveness	2%	3%	2%	3%	4%	4%	6%
lead others	2%	2%	2%	3%	3%	2%	5%
be attentive	2%	2%	3%	4%	4%	4%	6%

Digital skills

designing ict systems or applications	1%	1%	1%	2%	2%	2%	4%
computer programming	1%	1%	3%	3%	3%	3%	5%
process data	1%	2%	2%	2%	2%	2%	3%
analytics	1%	3%	2%	2%	3%	2%	3%
business ICT systems	1%	1%	2%	2%	2%	2%	4%

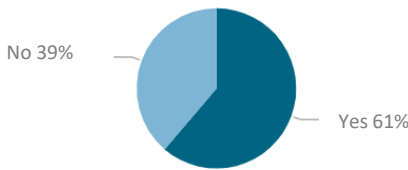
Management skills

business knowledge	3%	2%	4%	4%	4%	5%	6%
law	1%	2%	3%	3%	3%	3%	5%
develop strategy to solve problems	3%	3%	4%	5%	4%	6%	8%
identify with the company's goals	1%	2%	2%	2%	2%	3%	3%

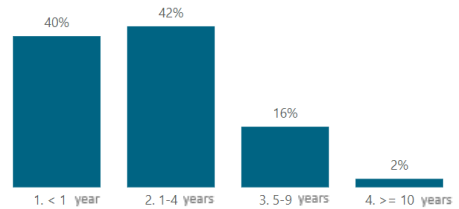
Languages and experience required in the Industry sector

Alongside the unstructured data extracted by text mining, the job vacancies also include structured data on the languages and years of experience required for the position. This data is analysed hereafter based on the 5,227 vacancies taken into account (2015 - April 2021).

Experience requirements (2015-2021)



Duration of required experience (2015-2021)



In the Industry sector, 61% of job vacancies have explicitly required experience. Of these, 42% ask for 1 to 4 years of experience and 40% < 1 year. 16% of these vacancies require an experience of 5 to 9 years and only 2% require experience ≥ 10 years. These expectations have increased considerably over the 2015-2021 period: Looking only at the offers from the past two years, 68% required experience, of which 46% required experience of 1 to 4 years and only 22% required experience of < 1 year.

Language proficiency is structured according to the CEFR (Common European Framework of Reference for languages) levels, which captures the requirements for the three official languages (Luxembourgish, French and German) as well as English.

French is the most in-demand language in the sector. 19% of vacancies do not require French, 17% consider it an asset and 64% require it as compulsory (28% even require a C-level, i.e. “proficient user”).

English is required in 57% of the offers, German in 43% and Luxembourgish in only 18%.

These language requirements have slightly increased over the 2015-2021 period, especially in the level of proficiency that is required.

Language requirements (2015 - 2021)

Luxembourgish	A	B	C	Total	
0. None	70%			70%	
1. Asset	4%	6%	2%	12%	
2. Compulsory	3%	10%	5%	18%	
Total	70%	7%	16%	6%	100%

French	A	B	C	Total	
0. None	19%			19%	
1. Asset	4%	10%	3%	17%	
2. Compulsory	5%	31%	28%	64%	
Total	19%	9%	41%	31%	100%

English	A	B	C	Total	
0. None	31%			31%	
1. Asset	4%	6%	1%	11%	
2. Compulsory	3%	24%	30%	57%	
Total	31%	7%	30%	31%	100%

German	A	B	C	Total	
0. None	35%			35%	
1. Asset	7%	11%	4%	22%	
2. Compulsory	4%	22%	17%	43%	
Total	35%	11%	33%	21%	100%

Skills profiles of several key occupations (1/3)

Industrial and R&D engineering and management (H1206)

Industrial engineers have been identified as one of the priority occupations in the sector due their growth and shortage in candidates (see page 30).

Top skills

The following graphs show the skills (attitudes and values, skills and knowledge) most in-demand for industrial managers and engineers, compared to the Industry sector average.

For this occupation, the attitudes/values of adapting to change, assuming responsibility and coping with pressure are most in-demand, even more so than for the sector on average.

For skills and knowledge, teamwork, quality standards, communication, problem solving, developing creative ideas (etc.) are most in-demand and significantly above the sector average. Employers' expectations towards candidates for this occupation are higher than for other occupations in the same sector.

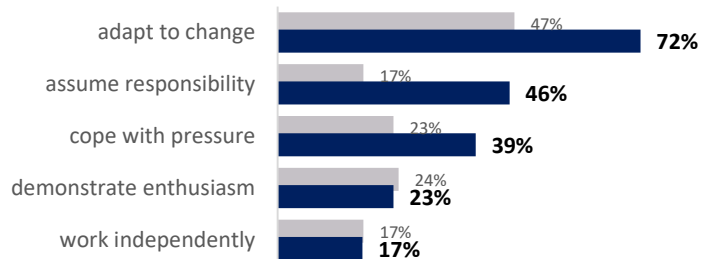
Growing skills

For the skills below (such as selling products, tolerating stress, thinking proactively...), a growth trend has been identified.

Category	Skill	2015	2016	2017	2018	2019	2020	2021
Job-specific skills	sell products	9%	2%	9%	7%	11%	16%	17%
	maintain relationship with suppliers	2%	4%	13%	5%	12%	8%	17%
	plan maintenance activities			4%	6%	7%	2%	7%
Personal skills	tolerate stress	20%	32%	33%	37%	51%	47%	57%
	think proactively	9%	16%	20%	14%	22%	12%	30%
	problem solving	32%	29%	36%	33%	38%	35%	53%
	think creatively	2%	2%	4%	3%	12%	10%	7%
	work independently	6%	10%	20%	13%	19%	29%	30%
Interpersonal skills	assertiveness			2%	3%	12%	8%	10%
	use positive language				2%	5%	8%	10%
	lead others	2%	4%	4%	2%	6%	10%	13%

Top attitudes & values (2015 - 2021)

Industrial and R&D engineering and management (H1206)



Top skills & knowledge (2015 - 2021)

Industrial and R&D engineering and management (H1206)



■ of offers (Industrial and R&D engineering and management)

■ of offers (Industry)

	2015	2016	2017	2018	2019	2020	2021
2015	9%	2%	9%	7%	11%	16%	17%
2016	2%	4%	13%	5%	12%	8%	17%
2017			4%	6%	7%	2%	7%
2018	20%	32%	33%	37%	51%	47%	57%
2019	9%	16%	20%	14%	22%	12%	30%
2020	32%	29%	36%	33%	38%	35%	53%
2021	2%	2%	4%	3%	12%	10%	7%
	6%	10%	20%	13%	19%	29%	30%
			2%	3%	12%	8%	10%
				2%	5%	8%	10%
	2%	4%	4%	2%	6%	10%	13%

Skills profiles of several key occupations (2/3)

Factory machine operations (H2903)

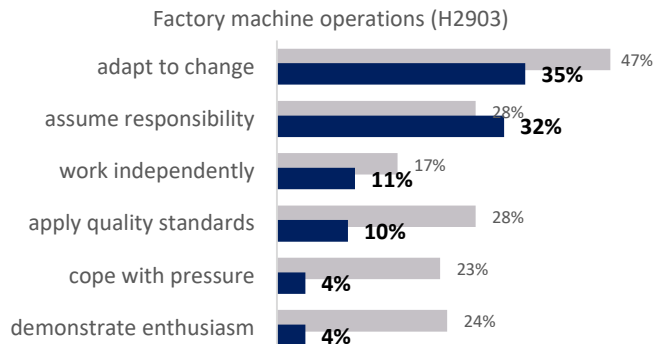
Machine operators are another key occupation in the industry sector that should be prioritised (see page 30).

Top skills

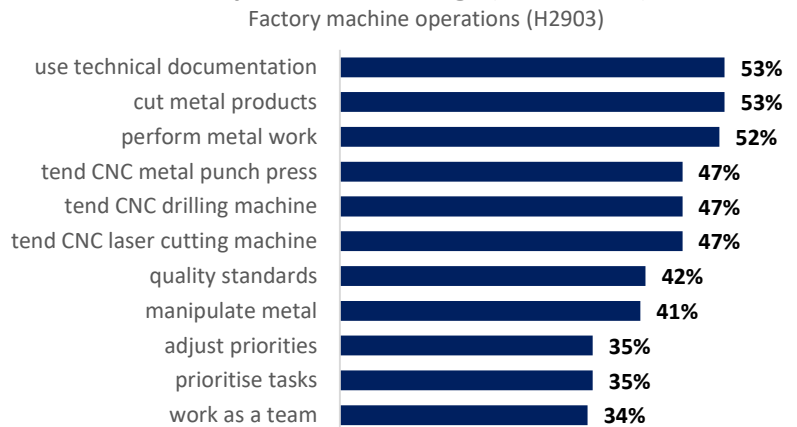
Based on the graph on the right, we note that the only key attitude/value that exceeds the sector-average is to assume responsibility (to avoid work-related accidents for example).

Skills and knowledge that stand out are mainly job-specific skills related to metal (cut metal products, perform metal work, tend CNC metal punch press, etc.), but also personal skills (priority management and teamwork).

Top attitudes & values (2015 - 2021)



Top skills & knowledge (2015 - 2021)



■ % of offers (Industry) ■ % of offers (Factory machine operations)

Growing skills

For the skills below (such as communication, adapting to different roles, using digital tools...), a growth trend has been identified. For some of these, the growth trend is particularly strong in 2021.

	2015	2016	2017	2018	2019	2020	2021	
Digital skills	use microsoft office		11%	4%		11%	14%	19%
	consult technical resources	14%	18%	31%	18%	22%	23%	25%
Personal skills / Interpersonal skills	adapt to different roles					7%	7%	19%
	tolerate stress					7%	8%	19%
	communication	10%	22%	31%	18%	26%	14%	44%

Skills profiles of several key occupations (3/3)

Manual assembly, sorting or packaging (H3302)

While the manual assembly, sorting and packaging occupation is experiencing a decline (see page 23), it is still the most frequently declared occupation in this sector (see page 17). Due to its versatile nature, it is interesting to do a more detailed analysis.

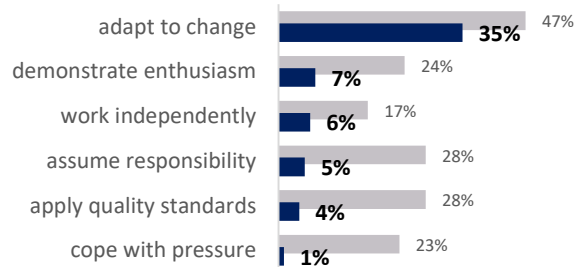
Top skills

Here, the graph shows that this is an occupation where some attitudes & values, such as assuming responsibility or coping with pressure, are less important than for other occupations in the sector.

As for skills/knowledge, the versatility of this profession is illustrated by the combination of technical (job-specific) skills, such as manufacturing processes, quality standards, the use of machines and measuring instruments, and digital (use a computer, excel), administrative (execute administration) and interpersonal (work as a team, identify clients' needs) skills.

Top attitudes & values (2015 - 2021)

Manual assembly, sorting or packaging (H3302)



Top skills & knowledge (2015 -2021)

Manual assembly, sorting or packaging packing (H3302)



■ of offers (Manual assembly, sorting or packaging operations)
 ■ of offers (Industry)

Growing skills

Job-specific skills

	2015	2016	2017	2018	2019	2020	2021
manufacturing processes	87%	85%	91%	94%	100%	100%	100%
precision measuring instruments		4%	3%	4%	10%	6%	22%

Personal skills / Interpersonal skills

	2015	2016	2017	2018	2019	2020	2021
work as a team	20%	19%	21%	36%	27%	29%	56%
adapt to change	33%	19%	29%	45%	33%	35%	67%

Digital skills

	2015	2016	2017	2018	2019	2020	2021
use a computer	7%	12%	12%	15%	10%	12%	33%
excel		4%	3%	6%	7%	6%	22%

Administrative skills

	2015	2016	2017	2018	2019	2020	2021
execute administration	13%	4%	3%	26%	23%	6%	33%

Conclusion of the skills-level analysis

The text mining approach has enabled us to transform unstructured text into structured data that can be put to use. Although a job advertisement generally does not provide a complete image of the skills actually required to do a job, it contains insightful information on what skills the employers in Luxembourg decide to put on the forefront. Given that a job advertisement is often a projection of the company into the near future, it also provides insights into future requirements.

Based on the analysis in this chapter, we can observe that skills expectations are increasing in the Industry sector.

Personal/interpersonal and digital skills stand out as particularly in-demand, and to a lesser extent also skills specific to the occupation or to the Industry sector. It is important to note that in our analysis, job-specific skills are probably underestimated compared to transversal skills, both because the text mining model finds it easier to identify transversal skills that appear more often in general and because job advertisements tend to mention transversal skills more often whereas job-specific skills might be considered an obvious requirement for a specific job.

These results of our skill-level analysis can be used to enrich the current training offer in Luxembourg, for example by integrating more transversal skills into the various existing trainings.

However, for the reasons mentioned above, these results need to be complemented by other analytical methods and with qualitative input from experts on the different occupations.

The results will also enable employers in the sector to reflect on the role of these skills in their company, and jobseekers to position themselves during the job application process (CV, cover letter, job interview) in relation to these skills.

5. Glossary of ROME occupations



Glossary of ROME occupations

This glossary aims to facilitate the understanding of all ROME labels used in the document. It includes, per ROME occupation, examples of functions (“appellations” in the ROME terminology) as well as a definition. The [ADEM website](#) enables the user to search for all ROME occupations and to find further details, such as typical activities and required skills. The ROME code in the table refers directly to the ROME page for that occupation.

Code	Occupation	Functions	Definition
D1102	Bakery operations	<ul style="list-style-type: none"> • Baker • Baking assistant • Baker & pastry chef 	Prepares and produces baked and pastry goods according to the rules of hygiene and food safety. Can sell bakery and pastry goods. Can manage a food retail business (bakery, pastry shop, etc.).
D1104	Pastry, confectionery, chocolate and ice cream making	<ul style="list-style-type: none"> • Pastry chef • Pastry chef assistant • Biscuit maker • Chocolatier • Confectioner • Ice-cream maker 	Prepares and makes pastry, confectionery, chocolate and ice-cream products according to food hygiene and safety rules. May sell pastry, confectionery, chocolate and ice cream products. Can manage a food retail business (pastry, confectionery, chocolate, ice cream, etc.).
D1106	Food and beverage sales	<p>Salesperson for:</p> <ul style="list-style-type: none"> • General food products • Meat products • Bakery-Pastry • Fish products • Organic products • Wines and spirits • Cheese 	Carries out the sale of food products (fresh and non-fresh) in accordance with retail regulations, food hygiene and safety rules and the commercial objectives of the company. Can prepare (cooking, cutting, making trays, etc.) fresh products.

Code	Occupation	Functions	Definition
D1406	Sales force management	Head of <ul style="list-style-type: none"> • sales • accounts • Export sales 	Organises and monitors the activity of the sales force according to the company's commercial policy. Negotiates and monitors key account contracts. Coordinates one or more sales teams.
D1407	Technical-commercial relations	<ul style="list-style-type: none"> • Technical sales engineer • Technical sales representative 	Prospects for a professional clientele, proposes technical solutions according to the needs and requirements of the client and negotiates the commercial conditions of the sale. May coordinate a sales team and lead a network of sales representatives.
D1408	Telesupport and telesales	<ul style="list-style-type: none"> • Teleadviser • Telemarketer • Call-center agent 	Prospects, advises a clientele (individuals, companies, etc.) and sells products or services (travel, telephony, equipment, clothing, etc.) by telephone according to the company's commercial objectives. May coordinate a team.
E1301	Printing machine operations	<ul style="list-style-type: none"> • Printing machine operator • Printer • ... 	Regulates, supervises and controls a simple or complex printing machine (offset, rotogravure, letterpress, etc.), on various materials (paper, cardboard, plastic, fabric, metal, etc.), according to safety rules and production requirements. Carries out the conformity control of printed products and the first level maintenance of machines and equipment. May coordinate a team.

Code	Occupation	Functions	Definition
E1306	Prepress	<ul style="list-style-type: none"> • Prepress operator • Graphic designer - page layout • Prepress department manager 	Carries out all or part of the pre-press operations for graphic elements (preparation of the printer's form, text/image layout, imposition, flashing, photoengraving, etc.) according to orders and requirements in terms of quantity, deadlines and quality. Can design and/or vectorise visual communication elements (graphics, logos, signs, signage, etc.). Can engrave and mark in hollow or in relief metals, plastics, composite materials, organic and mineral. Can coordinate a team and manage a prepress department.
F1502	Assembly of metal structures	<ul style="list-style-type: none"> • Team leader in steel construction Assembler of: <ul style="list-style-type: none"> • cladding • tents • cranes • pylons • scaffolding • metal constructions 	Assembles a permanent metal structure (construction of buildings, footbridges, bridges, etc.) or a temporary one (scaffolding, grandstands, tents, etc.) made up of prefabricated elements, usually pre-assembled on the ground, in accordance with safety regulations.
F1607	Fitting of closures and joinery	<ul style="list-style-type: none"> • Fitter of closures and joinery • PVC carpenter • Aluminium/PVC fitter • Locksmith • ... 	Prepares and installs all interior and exterior closures made of wood, metal, aluminium, PVC (doors, windows, shutters, walls, blinds, fences, garage doors, etc.) according to safety regulations. Can install and adjust automatic closing systems. Can maintain, repair and replace installed elements and their locking systems.

Code	Occupation	Functions	Definition
H1101	Customer assistance and technical support	Technical Support <ul style="list-style-type: none"> • Technician • Engineer • Manager 	Carries out and provides technical assistance and support to the company's customers (internal and external) in order to prevent and resolve technical operating and maintenance problems by dealing with questions and providing technical solutions in accordance with quality and deadline requirements. May coordinate a team.
H1102	Industrial business engineering	<ul style="list-style-type: none"> • Industrial commercial manager • Industrial project management engineer 	Carries out the conception, management and monitoring of commercial projects with highly technical and financial value (products, equipment, installations, services, solutions). Acts as an interface between the client and the company's departments by taking charge of the commercial, technical and financial aspects in accordance with regulations and the requirements of deadlines, costs and quality. May supervise a team of engineers, industrial project managers or a project team.
H1203	Mechanical product conception and drafting	Draftsman/woman in: <ul style="list-style-type: none"> • mechanical constructions • steel constructions • industrial installations 	Carries out the mechanical and physical conception of parts, products, equipment or installations and formalises them by means of standardised drawings of details, sub-assemblies or assemblies. Works on the basis of functional specifications, documentary analyses, specifications, orders and customer requirements. May coordinate a project or a team.
H1204	Industrial design	<ul style="list-style-type: none"> • Industrial designer 	Designs or improves the aesthetics (form, materials, colours) and functionality of products (furniture, utilitarian objects, audiovisuals, etc.) according to the company's objectives, the socio-cultural context and the constraints (economic, production, etc.). Respects safety and environmental standards and industrial and artistic property law. May carry out modelling and prototypes of the product and take part in monitoring the manufacturing of the project. May coordinate a team or manage a department.

Code	Occupation	Functions	Definition
H1206	Industrial and R&D engineering and management	<ul style="list-style-type: none"> • Research and development manager in industry • Industrial studies manager • Industrial engineer • ... 	Designs and finalises new products or new technologies. Develops existing ones, with the aim of commercial development and innovation in an industrial environment. Defines the means, methods and techniques for developing and implementing research results. May supervise and coordinate a project, a team, a service or a department.
H1208	Technical operations in automation and robotics	<ul style="list-style-type: none"> • Robotics technician • Automation technician • Industrial IT technician 	Carries out development studies of automated industrial systems or installations, on "control-command" type applications, low-voltage (programmable automatons, man-machine terminals, etc.) or high-voltage (power electronics, etc.). Carries out adjustments, fine-tuning or commissioning of installations. May modify equipment according to changing standards. May coordinate a team.
H1210	Technical operations in industrial R&D	<ul style="list-style-type: none"> • Industrial research officer • Technician in biology or chemistry R&D • Technical assistant for research studies • 	Prepares experiments, tests and trials. Performs measurements and analyses of biological, chemical or physical characteristics. Develops products, techniques or equipment using laboratory equipment. Works according to a research and development protocol. May coordinate a team.

Code	Occupation	Functions	Definition
H1302	Industrial Health Safety Environment -HSE- management and engineering	<ul style="list-style-type: none"> Occupational health and safety officer Health and safety engineer in industry 	Defines the safety policy (safety at work, working conditions, environmental protection), implements it and monitors it in accordance with Health, Safety and Environmental standards and regulations. May coordinate a team. May manage a department.
H1404	Industrial process support	<ul style="list-style-type: none"> Industrialisation technician Processing methods technician 	Studies and optimises technical solutions for the production/manufacturing of goods or technical services, based on functional sheets. Formalises them in the form of technical documents in accordance with regulatory standards and quality, cost and deadline requirements. Determines and develops technical operations, practices and production procedures (processes and products).
H1502	Industrial quality management and engineering	<ul style="list-style-type: none"> Quality manager in industry Quality Safety Environment - QSE - manager in industry 	Organises and coordinates the implementation of product and service quality throughout the processes and structures of the industrial company. Designs and implements methods and tools available to the company's departments to maintain and develop quality. May intervene in the liberalisation of products involving risks to people and property (food industry, chemicals, aeronautics, etc.). May coordinate health, safety and environmental procedures. May coordinate a team or run a department and manage the budget.

Code	Occupation	Functions	Definition
H1503	Technical operations in industrial analysis laboratories	<ul style="list-style-type: none"> • Industrial analysis laboratory operator • Industrial analysis laboratory assistant • Industrial analysis technician 	Carries out compliance measurements and analyses (standards, rates, etc.) on the biological, chemical or physical quality of materials or products, using laboratory equipment, according to a control protocol and the rules of hygiene, safety and the environment.
H2102	Food production equipment operations	<ul style="list-style-type: none"> • Manufacturing operator for culinary production 	Supervises and regulates a machine or an automated food processing line according to hygiene and safety rules and production requirements (quality, costs, deadlines, etc.). Carries out conformity checks on materials and products during production. Can carry out manual operations related to the product (trimming, etc.), assemble and adjust equipment and carry out first-level maintenance. May coordinate a team (operators, drivers, etc.).
H2502	Industrial production management and engineering	<ul style="list-style-type: none"> • Production line manager • Production engineer • Mechanical production engineer • ... 	Organises, optimises and supervises manufacturing resources and processes, with the aim of producing goods or products, according to safety, environmental, quality, cost, deadline and quantity requirements. May manage a team or department and its budget. May manage other departments related to production (maintenance, quality, etc.).

Code	Occupation	Functions	Definition
H2603	Machine operations for electronic products and components	<ul style="list-style-type: none"> • Electronic component production officer • Electronic component manufacturing technician 	Supervises and regulates one or more automated manufacturing machines for electrical, electronic or microelectronic products. Works according to safety rules and production requirements (deadlines, quality). Carries out compliance checks on products during or at the end of production. May carry out first-level maintenance on production equipment. May coordinate a team.
H2802	Machine operations for building materials	<ul style="list-style-type: none"> • Building materials manufacturing officer • Building materials machine operator 	Produces building materials (plasterboard, concrete tiles, concrete blocks, etc.) on automated equipment or lines, in accordance with safety rules and production requirements (deadlines, quantity, quality, etc.). Monitors the progress of production operations (parameters, etc.) and intervenes in the event of malfunction or breakdown (unblocking elements, adjusting parameters, etc.). Carries out the maintenance of the installations and the work area. May transport and move products. May carry out checks on materials and products.
H2902	Boilermaking - sheet metal work	<ul style="list-style-type: none"> • Boilermaker • Sheet metal worker • Industrial metalworker 	Manufactures welded structures by shaping and assembling sheet metal, tubes and profiles of various dimensions, in accordance with safety regulations. May coordinate a team.

Code	Occupation	Functions	Definition
H2903	Factory machine operations	<ul style="list-style-type: none"> Machine centre operator Numeric control (NC/CNC) operator Turner and milling machine operator 	Manufactures components by transforming materials until defined shapes and dimensions are obtained (flat, cylindrical, etc.), individually or in series, using conventional or numerically controlled machines and/or machine centres. Works according to safety rules and production requirements (quality, deadlines, etc.).
H2906	Robotic equipment operations	<ul style="list-style-type: none"> Operator of automated robotic assembly machinery 	Supervises and feeds automated production equipment (machine, line, robot, automaton) of mechanical manufacturing or assembly of structural elements, according to the safety rules and the production requirements (deadline, quality).
H2909	Mechanical assembly	<ul style="list-style-type: none"> Mechanical assembly worker 	Carries out assembly tasks of elements, parts and components using tools and machines, in accordance with safety rules and production requirements (deadline, quality).
H2911	Manufacturing of metal structures	<ul style="list-style-type: none"> Industrial metalworker Metal structure manufacturing worker 	Creates the sub-assemblies or structures of metal constructions from beams, girders, connecting elements, according to safety rules and production requirements (deadline, quality, etc.). May carry out the installation and final assembly of completed structures on site. May coordinate the activity of a team.

Code	Occupation	Functions	Definition
H2913	Manual welding	<ul style="list-style-type: none"> • Welder • ... 	Carries out assemblies of mechanically welded, boiler-made or piping components by melting and adding metal, by guiding the tool by hand on plates, tubes, profiles. Works according to safety rules and production requirements (deadline, quality, etc.). May coordinate a team.
H3302	Manual assembly, sorting or packaging operations	<ul style="list-style-type: none"> • Manufacturing laborers 	Carries out a series of manual operations linked to the sorting, assembly and packaging of components or products (plastics, food, optical...) on a work table and an automated production line (mainly at the end of the line). Works according to production requirements and health and safety standards. May feed a machine, carry out finishing operations on products, label them and check them on delivery. May coordinate a team.
I1304	Installation and maintenance of industrial equipment	<ul style="list-style-type: none"> • Industrial maintenance electrician • Industrial maintenance technician 	Carries out the maintenance, repair, monitoring and installation of industrial equipment of multi-technology design, in accordance with safety rules and regulations. May carry out the planning of maintenance or installation operations. May coordinate a team.

Code	Occupation	Functions	Definition
I1309	Electrical maintenance	<ul style="list-style-type: none"> • Maintenance electrician • ... 	Carries out preventive or corrective maintenance on electrical equipment or installations, based on electrical diagrams or layout plans, in accordance with safety rules and regulations. May carry out installation or modification operations on electrical equipment. May coordinate a team.
I1310	Industrial mechanical maintenance	<ul style="list-style-type: none"> • Industrial maintenance mechanic 	Carries out the maintenance, upkeep, upgrading or mechanical renovation of materials, equipment and industrial production/operation facilities, in accordance with safety rules and production requirements (deadlines, quality, etc.). May coordinate a team.
I1503	Operations in harmful environments and products	<ul style="list-style-type: none"> • Asbestos remover • ... 	Carries out technical sanitation, decontamination or maintenance operations in nuclear, bacteriological or chemical environments. Implements equipment, installations and procedures for moving polluting and harmful elements according to strict safety and health rules. May coordinate a team.
K1903	Legal advice	<ul style="list-style-type: none"> • Lawyer • Tax specialist • Head of legal department 	Advises and informs natural or legal persons in legal and judicial matters, draws up legal documents and manages litigation. May orally present the defence of clients during pleadings, may ensure the legal security of companies. May train people in his/her speciality and keep them up to date by monitoring information.

Code	Occupation	Functions	Definition
K2204	Cleaning activities	<ul style="list-style-type: none"> • Surface cleaner • Cleaning team leader 	Carries out cleaning and maintenance operations on surfaces, premises and equipment on service and industrial sites in accordance with health and safety regulations. Can carry out surface renovation operations (plastic floors, carpets, marble, etc.). Can coordinate a team.
K2304	Revalorisation of industrial products	<ul style="list-style-type: none"> • Waste sorting agent • ... 	Carries out sorting operations on waste and industrial products at the end of their life (textiles, plastics, glass, components, etc.) in accordance with safety and environmental rules and recovery requirements (quality, rate, etc.). May recondition industrial products for reuse or recycling. May coordinate a team.
K2306	Eco-industrial operations	<ul style="list-style-type: none"> • Waste manager in an industrial company • Wastewater treatment plant manager • Drinking water operations technician 	Organises, coordinates and controls resources and processes for the purpose of operating water treatment facilities (drinking water, waste water) or for the elimination, recovery or storage of waste (household, industrial, hospital). Works in accordance with safety and environmental standards and the requirements of quality, cost and hygiene. May manage a team or a department and manage the budget.
M1101	Purchasing	<ul style="list-style-type: none"> • Buyer 	Researches and selects products and suppliers according to the company's purchasing strategy and negotiates commercial contracts according to cost, time and quality objectives. May develop a purchasing strategy for the company. May coordinate a team.

Code	Occupation	Functions	Definition
M1202	Audit	<ul style="list-style-type: none"> • Internal auditor • Auditor • « Expert-comptable » 	Carries out an audit or control of the accounting and financial operations of the organisation in accordance with legal obligations. Contributes to the prevention and control of the financial risks of the organisation and to the search for possible irregularities. May provide technical support in accounting and financial management to struggling companies. May coordinate the activities of a team or manage a department.
M1203	Accounting	<ul style="list-style-type: none"> • Accountant • Fund accountant • Accounting clerk 	Records and centralises the commercial, industrial or financial data of an organisation in order to draw up balances of accounts, profit and loss accounts, balance sheets, etc. in accordance with legal requirements. Checks the accuracy of accounting entries and reports on the economic situation of the organisation. May carry out activities relating to payroll and personnel management. May coordinate the activity of a team or manage an organisation.
M1501	Human resources assistance	<ul style="list-style-type: none"> • Human resources assistant 	Carries out the administrative follow-up of personnel management (contracts, absences, medical examinations, declarations to social organisations, etc.) and continuous training in accordance with social legislation, labour regulations and the company's human resources policy. May prepare and check pay slips. May monitor outsourcing contracts for services (payroll, etc.). May coordinate a team.

Code	Occupation	Functions	Definition
M1601	Reception activities	<ul style="list-style-type: none"> • Receptionist • Information desk clerk 	<p>Welcomes, informs and directs people at the reception area (station, company, etc.) or at the switchboard and issues passes, badges, tickets, invitations, etc. Can manage mail (collection, distribution, etc.), simple administrative tasks (filing, computer entry, typing of pre-established letters, etc.). May coordinate a team.</p>
M1602	Administrative operations	<ul style="list-style-type: none"> • Administrative clerk 	<p>Carries out routine administrative work (checking documents, typing and formatting pre-established letters, following up on administrative files, etc.) according to the organisation of the organisation or department. May be in charge of reprography and archiving activities. May be responsible for the reception of the organisation.</p>
M1607	Secretarial services	<ul style="list-style-type: none"> • Administrative assistant • Secretary • Legal secretary 	<p>Carries out the administrative processing of files (typing letters, formatting documents, etc.) and transmits information (e-mail, notes, faxes, etc.) on behalf of one or more departments or a manager, depending on the company's organisation. May take charge of the complete follow-up of files (maintenance contracts for equipment, the organisation, etc.). May coordinate a team.</p>
M1703	Product management	<ul style="list-style-type: none"> • Product manager • Market manager • Brand manager 	<p>Manages the evolution of a product or range of products, from its design to its marketing, according to the company's sales and marketing strategy. May coordinate a team.</p>

Code	Occupation	Functions	Definition
M1707	Commercial strategy	<ul style="list-style-type: none"> • Commercial director • Sales manager 	Defines and implements the company's commercial strategy according to economic objectives. Manages a department and coordinates a team. May organise and develop international sales activity or a type of e-commerce sale.
M1805	IT development	<ul style="list-style-type: none"> • IT project manager • Web developer • Software developer • Big Data developer • Full-stack developer • Business intelligence developer - analyst • IT functional analyst • Computer application integrator • Software tester 	Designs, develops and finalises an IT application project, from the study phase to its integration, for a client or a company according to functional needs and specifications. May lead development projects. May coordinate a team.
M1806	IT consulting	<ul style="list-style-type: none"> • IT consultant • IT transformation project manager (MOA) • Information system functional architect • ERP / SaaS consultant 	Translates the functional requirements of a client's IT system, according to the objectives of the business area (accounting, human resources, logistics, sales, production, etc.) and the economic and logistical constraints. Negotiates with IT specialists the components of an application and a software tool, throughout the design and development process, in the interests of the company and the end users. Assists the project manager in defining requirements, solutions to be implemented and their integration into the company's information system. Participates in information system implementation projects. May supervise a an information system transformation (MOA) project.

Code	Occupation	Functions	Definition
N1101	Forklift operations	<ul style="list-style-type: none"> • Forklift operator • Aerial work platform operator 	<p>Drives a handling machine (forklift, stacker,...) for moving, loading/unloading, storage/storage removal, supply, removal of loads (goods, products, equipment, ...), according to quality procedures, safety rules and time requirements. May carry out other operations related to the functioning of a warehouse (reception and control of products, stock keeping, preparation of orders, inventory, etc.) or a production or distribution site (packaging, etc.). May lead a team of operators (temporary workers, trainees, etc.).</p>
N1103	Warehouse operations	<ul style="list-style-type: none"> • Warehouse worker • Warehouse assistant • Packing machine operator • Shipping logistics employee • Stock manager • Order picker 	<p>Carries out reception, storage, stock-keeping, order preparation and dispatch operations for goods, products, raw materials, etc. in accordance with quality procedures, health and safety rules and deadlines. Can carry out handling operations using light handling equipment (pallet truck, hand truck, trolleys, shopping trolleys, etc.) or self-propelled machines (forklift truck, etc.). Can carry out specific operations (packaging, simple assembly, packing, supplying production lines, etc.) and carry out sales operations at the counter.</p>

Code	Occupation	Functions	Definition
N1303	Logistics operations	<ul style="list-style-type: none"> • Logistician • Logistics assistant 	Plans, organises and controls all or part of the logistics operations (reception, storage, order preparation, supply, dispatch of goods, products, etc.) of a site (logistics platform, production unit, etc.) or a department, in accordance with requirements (deadlines, quality, costs, etc.), regulations and health and safety rules. May take part in carrying out logistics operations and intervene in a specialised field (stock management, supply, etc.). May coordinate the activity of a team.
N4105	Short-haul driving and delivery	<ul style="list-style-type: none"> • Delivery driver • Warehouse driver • Delivery driver for heavy goods vehicles 	Delivers or collects goods, parcels, materials, waste, etc. from a predefined route and within a restricted geographical area. Carries out the delivery route using a light vehicle or a heavy goods vehicle in accordance with road transport regulations and customer satisfaction requirements (deadlines, quality, etc.). Carries out operations related to the delivery (route, loading/unloading of goods, issuing of delivery documents, etc.). May carry out specific operations (preparing orders, assembling furniture, collecting money, carrying meals, etc.).

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ADEM launched the Future Skills Initiative in October 2020 as a framework that integrates the various projects related to the anticipation and development of future skills with the aim of employment preservation. This initiative is based on three pillars:

1. Conduct and contribute to national and sector-level studies on labour market developments and skills shortages,
2. Introduce new upskilling/reskilling programmes for jobseekers,
3. Raise awareness among employers when it comes to the importance of workforce planning (which includes proactively investing in the skills and employability of their employees) and develop a new programme to support employers in upskilling/reskilling their employees.

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