



Sectoral Human Capital Study II

Aerospace industry

Results from the study
– 1st edition

About the study



Project name:

Sectoral Human Capital Study II
Aerospace industry



Objective:

Increasing the knowledge of the current and future competency needs in the aerospace industry



Sample:

Qualitative research: industry experts analysts of trends in the labor market, members of the NDS, representatives of public administration and representatives of educational institutions

Quantitative research: employers and employees representing the industry



Timing:

1st research round: October 2020 – November 2021 including **qualitative research:** June - August 2021.

Industry information

The aerospace industry includes entities conducting the following types of activity:

C30.3	Production of other transport equipment
PKD 26.20.Z	Manufacture of computers and peripheral devices
PKD 26.30.Z	Production of (tele)communication equipment
PKD 26.51.Z	Production of instruments and measuring and control devices and Navigation
PKD 26.52.Z	Manufacture of watches and clocks
PKD 26.70.Z	Manufacture of optical instruments and photographic equipment
PKD 51.10.Z	Passenger air transport
PKD 51.21.Z	Air transport of goods
PKD 51.22.Z	Space transport
PKD 26.51.Z	Manufacture of aviation instruments, manufacture of air navigation systems, classified (subclass of the main code included in the study)
PKD 27.40.Z	Production of lighting equipment for aircraft
PKD 28.99.Z	Production of aircraft take off machines and devices, catapulting devices and similar devices
PKD 33.13.Z	Repair and maintenance of electronic and optical devices
PKD 33.16.Z	Repair and maintenance of aircrafts and spacecraft
PKD 52.23.Z	Service activities supporting air transport
PKD 52.24.C	Reloading of goods at other reloading points
PKD 77.35.Z	Rental and lease of means of air transport
PKD 93.19.Z	Other activities related to sport (concerns, for example, Aero Clubs of 35 entities with the main PKD)

There were **16,044 entities** (excluding the self-employed) in the aerospace industry in 2021*

* Estimates for PKD groups based on the number of entities registered in REGON in connection with ZUS data regarding companies contributing to the economy

95,1% of enterprises in the industry are micro-enterprises, 4.6% are small and medium-sized enterprises, and only 0.3% are large entities *

* Statistics Poland data, REGON, 2021



Key industry positions related to major business processes

Conducting development and industrial works

chief constructor

technologist

constructor

Manufacturing of a product / service

technologist

production manager

Continuing airworthiness management and quality control

test engineer / controller

aircraft mechanic technician / certifying staff

quality auditor

airworthiness engineer / maintenance engineer

Management of air and space operations

pilot

handling service employee

purchaser

merchant, airworthiness engineer / service engineer

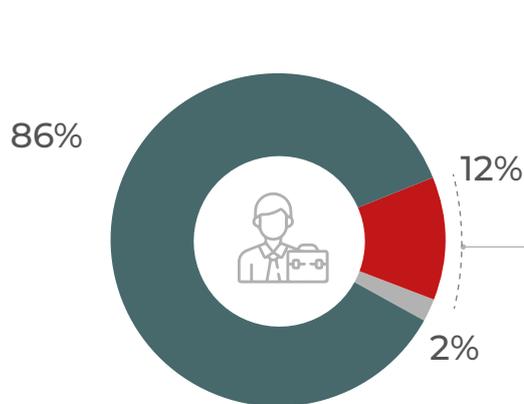
service manager

Demand for employees

In the period from July 2020 to July 2021, only 12% of employers in the industry were looking for new people to work

60% of employers looking for employees experienced problems in recruitment

Searching for employees in the last 12 months – employers (%)

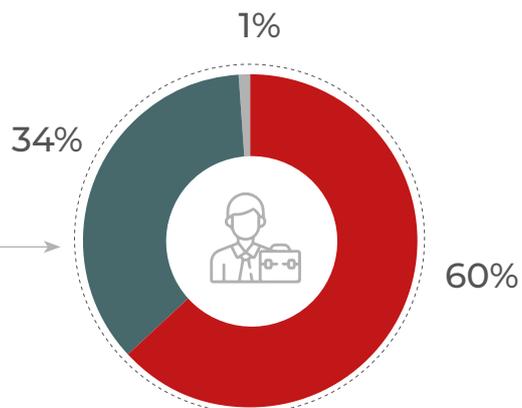


86% Not searching for employees

12% Search for employees

2% Do not know

Problem experience during recruitment in the last 12 months – employers (%)



60% Had problems

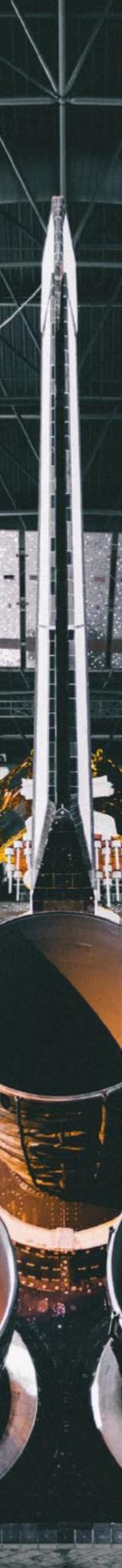
34% No problems

1% Do not know

Source: own study based on BBKL II aerospace industry – I edition 2021. The question was answered by all employers (n=801)

Source: own study based on BBKL II aerospace industry – I edition 2021. The question was answered by employers who were looking for employees in the last 12 months (n = 102)





Employees most sought after in the industry

The most frequently sought after employees in key positions:



electronics technician (24%
of employers' indications)



technologist (15%)



constructor (15%)



merchant supplier (14%)

Source: own study based on BBKL II aerospace industry – I edition 2021. The question was answered by employers who were looking for employees in the last 12 months (n = 101)

Expected changes in the number of employees

73% of employers believe that the number of employees in the industry will remain at the same level as at present

Source: own study based on BBKL II aerospace industry – I edition 2021. The question was answered by all employers (n=801)

10% of employers predict an increase in employment in the next 3 years. The positions where this increase will be the greatest are pilot and technologist (20% of indications from this group of employers)

Source: own study based on BBKL II aerospace industry – I edition 2021. The question about the increase in employment in individual positions was answered by employers who forecast such an increase in the next 3 years (n = 80)

Employee satisfaction with the workplace

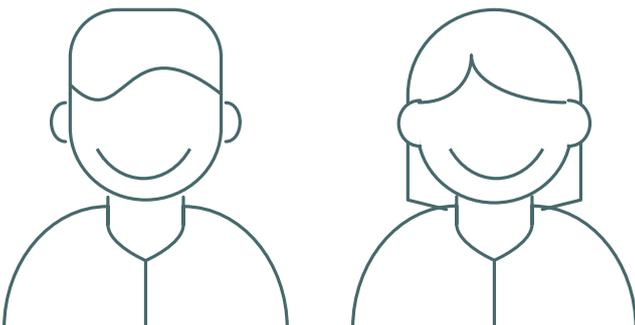
95% of employees employed at key positions do not intend to change their job in the next year

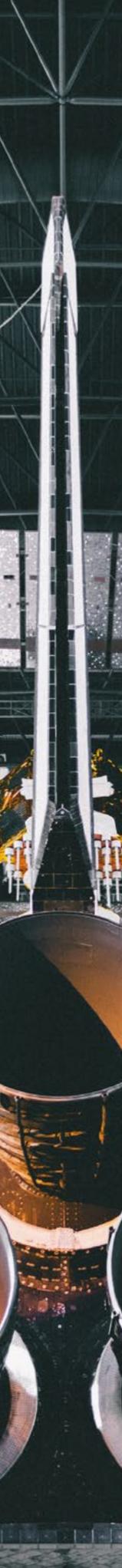
92% employed at key positions employees express overall job satisfaction

The most frequently indicated reasons for job satisfaction according to employees are:

- » relations with colleagues (92%)
- » working conditions (91%)
- » relations with superiors (91%)
- » job security (91%)

Source: own study based on BBKL II aerospace industry – I edition 2021. The question was answered by all employees (n=803)





Assessment of employees' skills

68% of employers assess employees in their company:

- » 39% systematically
- » 29% occasionally

verification of the level of competence of employees is most often carried out in enterprises employing 50 employees or more (92% of employers' indications), in 60% of such enterprises employees are assessed systematically

Source: own study based on BBKL II aerospace industry – I edition 2021. The question was answered by all employers (n=801)

How the employer assesses the skills of employees:

- » 69% (employers' indications) interview with a supervisor
- » 20% descriptive rating
- » 17% assessment of the achievement of the goals set for themselves

Source: own study based on BBKL II aerospace industry – I edition 2021. The question was answered by employers conducting employee assessment (n=515)

95% of employers believe that the skills of employees in their companies are satisfactory

- » with 55% admit that they are fully satisfactory (do not require improvement)

Source: own study based on BBKL II aerospace industry – I edition 2021. The question was answered by all employers (n=801)

Actions taken when employees lack skills

70% of employers train current employees

12% of employers reorganize their business to make better use of employees' existing skills

23% of employers are looking for and hiring new people with the right skills

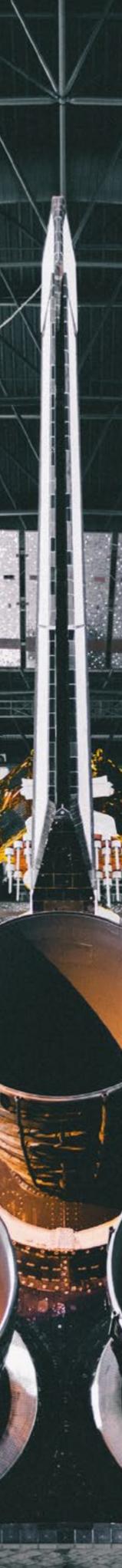
Source: own study based on BBKL II aerospace industry – I edition 2021. The question was answered by all employers (n=801)

Forms of developing employees' competences in the workplace

- » 44% (employers' indications) instructions on how to use new hardware, machines, software
- » 36% of internal courses and trainings carried out by the company's employees
- » 28% e-learning courses
- » 26% of courses and trainings provided by an external company
- » 22% turnover in workplaces

Source: own study based on BBKL II aerospace industry – I edition 2021. The question was answered by all employers (n=801)





Assessment of offered professional development methods by employees

85% of employees rate the ways of professional development offered by the company as being sufficient

Source: own study based on BBKL II aerospace industry – I edition 2021.
The question was answered by all employees (n=803)

Willingness of employees to develop professional skills

41% of employees believe they have sufficient skills and do not need training

»36% of employees express a desire to develop skills, the most important reason for this is the desire to improve the skills needed at work

»11% of employees use computer programs as part of a form of self study related to professional work

Source: own study based on BBKL II aerospace industry – I edition 2021.
The question was answered by all employees (n=803)

Balance of competences (skills)

Employers in the industry assess the competences defined for individual key positions as important or rather important from the point of view of the professional tasks performed in a given position

The analysis made it possible to identify

- » areas of competence mismatches
- » competences that are important but difficult to obtain (competence gap)
- » competences whose importance will change in the next 3 years

Competency mismatch

A competence mismatch is the result of a comparison of the importance of a given competence made by employers, from the point of view of work in a given position, with a self-assessment of the level of competences possessed by employees employed in this position. This statement allows you to identify:

- » **Scarce skills** – assessed as relatively more important by employers while scoring relatively low in employees' self-assessment
- » **Surplus skills** – assessed as relatively less important by employers while scoring relatively high in employees' self-assessment
- » **Balanced skills** – assessed as relatively more important by employers and scoring relatively high in employees' self-assessment
- » **Sufficient skills** – assessed as relatively less important by employers and scoring relatively low in employees' self-assessment



Summary of employers' assessment of the importance of competences and employees' self-assessment

The biggest competency mismatch*



pilot



technologist



service manager



quality auditor

The smallest competency mismatch



constructor



production manager



aeronautical engineer/
certifying staff

Competence gap

A competence gap occurs when a competence assessed by employers as relatively more important (according to more than 50% of employers) is difficult to obtain

The biggest competence gap



aeronautical engineer/
certifying staff

The smallest competence gap



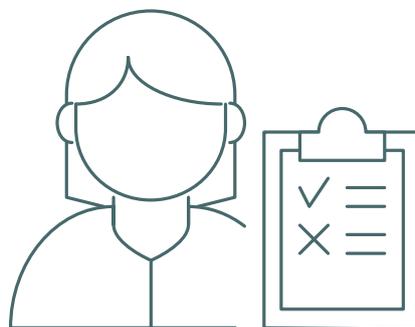
merchant
supplier

* The competency mismatch was calculated by comparing the employers' opinions on the importance of competencies with the selfassessment of the level of these competencies made by employees

Competencies important for employers for which demand will increase

The position where employers most often predict an increase in the importance of competences is a quality auditor. The competences of the quality auditor, the importance of which will increase, include:

- » ability to learn and self-develop (35% of employers' indications)
- » knowledge of English at least equal to B2 (33%)
- » persistent pursuit of the goal, lack of submission (33%)
- » the ability to interpret external and internal documentation used in the enterprise and to use control documentation, protocols and reports of audits and postaudit information (33%)
- » the ability to supervise the quality of the company's production and technological processes (33%)

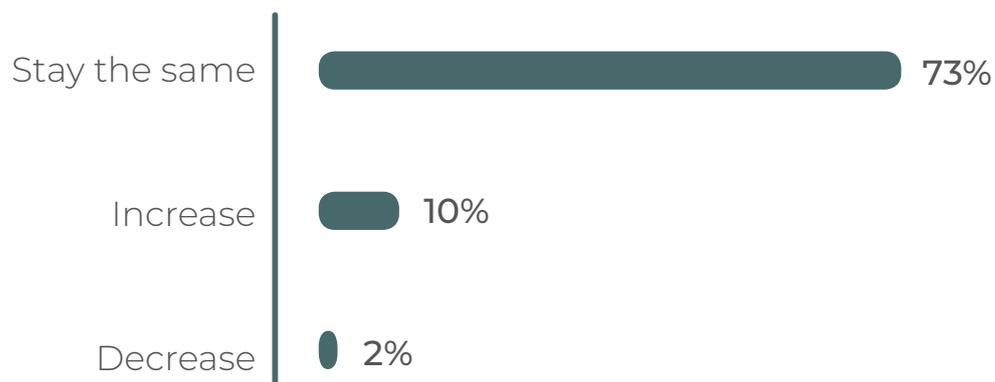


For other positions, employers usually do not foresee changes in the meaning of competences



Forecast of employee demand

Employers' forecast of changes in the level of employment within 3 years



Source: own study based on BBKL II aerospace industry – I edition 2021. The question was answered by all employers (n=801)

Anticipated demand for employees in key positions

Key positions for which demand will increase, according to employers in their companies, within 3 years

- » pilot – 20% of employers' indications
- » chief designer – 13%
- » technologist – 20%
- » handling service employee – 13%
- » quality auditor – 15%
- » constructor – 11%

Source: own study based on BBKL II aerospace industry – I edition 2021. The question was answered by all employers (n=801)

Demand for new positions and trends and factors affecting the future of the industry

Trends and factors that particularly affect the industry are:

technological trends:

the growing use of satellite technologies in economic areas

development of digitization, automation, virtual technologies and augmented reality technologies

rapid development of materials with potential applications in the aerospace industry

creating solutions in the field of biotechnology and medicine enabling long term stay in space

business trends

the growing role of the private sector and the number of functioning entities cooperating and sharing risk projects with the public sector and among themselves

advanced capabilities to optimize industry processes and decisionmaking through the use of big data and the development of computing infrastructure

progressive commercialization of space technologies forming the Space 4.0 trend

social factors

mismatch of educational processes to the requirements of technological development of the industry, including progressive robotization and automation processes

economic factors

increase in labour costs

legal factors

the emergence of increasingly stringent non-sectoral regulations leading to significant changes in the organization and course of production processes and requiring additional investment by enterprises



Directions of changes in the industry

Respondents taking part in the quantitative and qualitative survey considered the most likely directions of the industry's development to be:



- » penetration of positions and professional roles from the broadly understood IT industry in connection with the progressive computerization and digitization of business activity



- » the consequence of technological trends will be the emergence in the industry of technical and highly specialized positions (or types of positions) related to the IT sector

Development activity plans

37% of employers are considering increasing expenditures on innovation in the company, at the same time such investment plans were declared by 43% of entrepreneurs from the subsector of production of aircraft, spacecraft and similar machines and 42% of employers producing instruments and instruments for measurement, control and navigation

34% of respondents indicated the intention to create new services/products

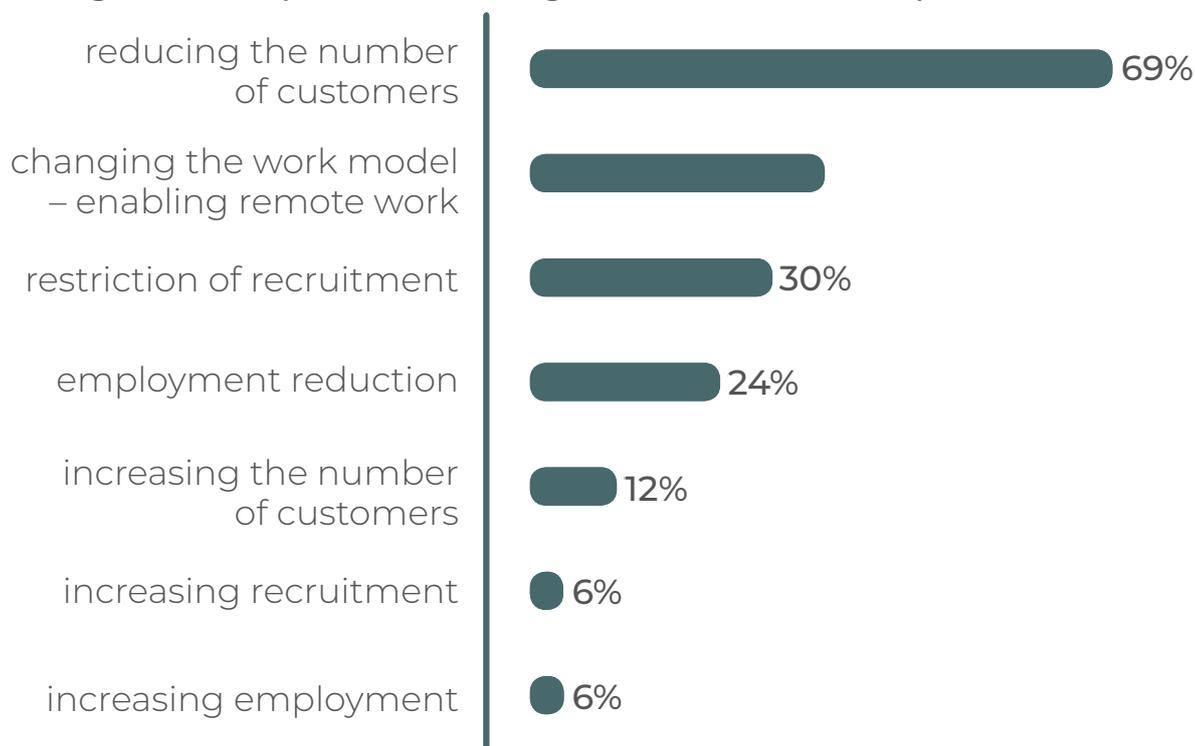
28% of respondents are planning the reduction of substances hazardous to the environment

Impact of the pandemic on the aerospace industry

41% of employers say the pandemic is having a negative impact on their business

34% of employers rate the impact of the pandemic on the functioning of the company as a little negative and a little positive

Changes in companies resulting from the COVID-19 pandemic



Source: own study based on BBKL II aerospace industry – I edition 2021. The question was answered by employers declaring changes in connection with the COVID-19 pandemic (n = 601)

The largest number of employers experiencing the negative effects of COVID-19 indicated:

- » decrease in the number of orders (74% of employers' indications)
- » the need to adapt procedures in the company to health and safety requirements (71%)
- » financial liquidity imbalance (54%)



A full discussion of the test results
can be found in the report:

**Industry Balance Sheet
of Human Capital II
Aerospace industry
Results of the first edition
of research (in Polish)**



[https://www.parp.gov.pl/publications/
publication/branzowy-bilans-kapitalu-
ludzkiego-branza-przemysl-lotniczo-
kosmiczny-raport-z-i-edycji-badan](https://www.parp.gov.pl/publications/publication/branzowy-bilans-kapitalu-ludzkiego-branza-przemysl-lotniczo-kosmiczny-raport-z-i-edycji-badan)

